United States Government Accountability Office

GAO

Report to Congressional Requesters

October 2005

# SOCIAL SECURITY REFORM

# Other Countries' Experiences Provide Lessons for the United States

GAO-06-126

Highlights of GAO-06-126, a report to congressional requesters

October 2005

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## Other Countries' Experiences Provide Lessons for the United States

### Why GAO Did This Study

Many countries, including the United States, are grappling with demographic change and its effect on their national pension systems. With rising longevity and declining birthrates, the number of workers for each retiree is falling in most developed countries, straining the finances of national pension programs, particularly where contributions from current workers fund payments to current beneficiaries—known as a pay-as-you-go (PAYG) system. Although demographic and economic challenges are less severe in the United States than in many other developed countries, projections show that the Social Security program faces a long-term financing problem. Because some countries have already undertaken national pension reform efforts to address demographic changes similar to those occurring in the United States, we may draw lessons from their experiences.

The current and preceding Chairmen of the Subcommittee on Social Security of the House Committee on Ways and Means asked GAO to study lessons to be learned from other countries' experiences reforming national pension systems. GAO focused on (1) adjustments to existing PAYG national pension programs, (2) the creation or reform of national pension reserve funds to partially prefund PAYG pension programs, and (3) reforms involving the creation of individual accounts.

We received technical comments from SSA, Treasury, the OECD, and other external reviewers.

www.gao.gov/cgi-bin/getrpt?GAO-06-126.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Barbara Bovbjerg at (202) 512-7215 or bovbjergb@gao.gov.

### What GAO Found

All countries in the Organisation for Economic Co-operation and Development (OECD), as well as Chile, have, to some extent, altered their national pension systems, consistent with their different economic and political conditions. While changes in one country may not be easily replicated in another, countries' experiences may nonetheless offer potentially valuable lessons for the United States. Countries' experiences adjusting PAYG national pension programs highlight the importance of considering how modifications will affect the program's financial sustainability, its distribution of benefits, and the incentives it creates. Also, how well new provisions are implemented, administered, and explained to the public may affect the outcome of the reform. Most of the countries GAO studied both increased contributions and reduced benefits, often by increasing retirement ages. Generally, countries included provisions to help ensure adequate benefits for lower-income groups, though these can lessen incentives to work and save for retirement.

Countries with national pension reserve funds designed to partially pre-fund PAYG pension programs provide lessons about the importance of early action and sound governance. Some funds that have been in place for a long time provide significant reserves to strengthen the finances of national pension programs. Countries that insulate national reserve funds from being directed to meet nonretirement objectives are better equipped to fulfill future pension commitments. In addition, regular disclosure of fund performance supports sound management and administration and contributes to public education and oversight.

Countries that have adopted individual account programs—which may also help prefund future retirement income—offer lessons about financing the existing PAYG pension program as the accounts are established. Countries that have funded individual accounts by directing revenue away from the PAYG program while continuing to pay benefits to PAYG program retirees have expanded public debt, built up budget surpluses in advance, cut back or eliminated the PAYG programs, or taken some combination of these approaches. Because no individual account program can entirely protect against investment risk, some countries have adopted individual accounts as a relatively small portion of their national pension system. Others set minimum rates of return or provide a minimum benefit, which may, however, limit investment diversification and individuals' returns. To mitigate high fees, which can erode small account balances, countries have for example capped fees or centralized the processing of transactions. Although countries have attempted to educate individuals about reforms and how their choices may affect them, studies in some countries indicate that many workers have limited knowledge about their retirement prospects.

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### Abbreviations

| | |
|---|---|
| GDP | gross domestic product |
| ILO | International Labour Organization |
| NDC | notional defined contribution |
| OECD | Organisation for Economic Co-operation and Development |
| PAYG | pay-as-you-go |
| SSA | Social Security Administration |

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**United States Government Accountability Office**
**Washington, DC 20548**

October 21, 2005

The Honorable Jim McCrery
Chairman
Subcommittee on Social Security
Committee on Ways and Means
House of Representatives

The Honorable E. Clay Shaw, Jr.
House of Representatives

Many countries, including the United States, are grappling with demographic change and its effect on their national pension systems and long-term fiscal posture. With increasing longevity and declining birthrates, the number of workers for each retiree is falling in most developed countries. These trends can strain the finances of national pension programs, particularly those in which contributions from current workers fund payments to current beneficiaries—a form of financing known as pay-as-you-go (PAYG). Demographic and economic challenges are less severe in the United States than in many other developed countries—the birthrate is not as low, people are more likely to stay in the labor force for a greater number of years, and immigration continues to provide young workers. Yet projections show that the Social Security program faces a significant long-term financing problem. Because some countries have already undertaken national pension reform efforts to address demographic changes similar to those occurring in the United States, their experiences can provide lessons for U.S. policymakers.

To assist the Subcommittee in its deliberations concerning Social Security's future, you asked us to review the experiences of other developed nations and highlight lessons that can be learned from their various approaches to national pension reform. Historically, developed countries have had national pension systems that included some form of a PAYG pension program. Countries have typically undertaken quite different approaches to reforming their pension systems. These reforms fall into three broad categories—adjustments to PAYG programs (decreased benefits or increased contributions),[1] efforts to set aside funds

[1]Generally, changes in contributions made to a national pension program means changes in the tax rate on individuals or employers.

to help pay future benefits through a national reserve fund, and efforts to prefund retirement income through contributions to individual accounts. Accordingly, our objectives were to examine the lessons that can be drawn from countries that have (1) adjusted their existing PAYG national pension systems, (2) adopted national pension reserve funds to help finance their national pension systems, and (3) adopted individual account reforms to their national pension systems.

To address these objectives, we studied the experiences of the countries that constitute the Organisation for Economic Co-operation and Development (OECD), plus Chile, the nation that pioneered the use of individual accounts.[2] As part of our analysis, we assessed both the extent to which another country's circumstances are similar enough to those in the United States to provide a useful example and the extent to which particular approaches to pension reform were considered to be successful.[3] We aligned our lessons with the criteria GAO developed for evaluating domestic Social Security reform proposals—fiscal sustainability, adequacy and equity, and implementation and administration of reform.[4] At the same time, drawing lessons from other countries' experiences requires recognition that countries have different starting points, including unique economic and political environments, and that availability of other sources of retirement income, such as occupational pensions, also varies greatly. Therefore, reforms in one country may not be easily replicated in another or may not lead to the same outcome.

Our review included interviews with, and analysis of materials provided by, officials and interest group representatives in Washington, D.C.; Paris; and London. We met with pension experts and country specialists at the OECD as well as French and British experts. In addition, we drew from interviews conducted by GAO with Chilean officials in 2002. We conducted

[2]The OECD is a forum for the governments of 30 countries to work together on economic, social, environmental, and governance issues through their commitment to democratic government and the market economy. The OECD works to promote economic growth, financial stability, trade and investment, technology, innovation, and development cooperation.

[3]For additional information concerning Social Security reform in the United States, see GAO, *Social Security Reform: Answers to Key Questions*, GAO-05-193SP (Washington, D.C.: May 17, 2005).

[4]See GAO, *Social Security: Criteria for Evaluating Social Security Reform Proposals*, GAO/T-HEHS-99-94 (Washington, D.C.: Mar. 25, 1999).

our review between August 2004 and September 2005 in accordance with generally accepted government auditing standards. For additional discussion of our scope and methodology, see appendix I. We also include a glossary of key terms in the back of this report.

## Results in Brief

With respect to adjustments to PAYG programs, the experiences of the countries we studied highlight the importance of considering how modifications will affect the program's financial sustainability, its distribution of benefits, the incentives it creates, and the extent to which the public understands the new provisions. To reconcile PAYG program revenue and expenses, most OECD countries have both increased contributions and reduced benefits, often in part by increasing retirement ages. Although several countries have yet to make their programs financially sustainable, some have come close to doing so. According to OECD economists, some countries (Sweden and Italy, for example) have succeeded in large part by automatically linking benefits to factors such as worker contributions, changes in demographics, and growth in the national economy. Generally, the countries that have come closest to achieving sustainability have also undertaken other types of reform, such as the individual account programs in Sweden and Australia. These reforms may, however, substantially reduce benefits promised originally, leaving future retirees with benefits that replace a lower portion of their earnings than those provided to earlier generations or make them payable beginning at a later age. Other countries' adjustments to their existing PAYG programs have had mixed results for the programs' solvency, and debate continues about additional reforms to reduce benefits or increase revenue. This is the case in France and Germany, for example. Often countries have included in their reforms provisions to help ensure adequate benefits for lower-income groups. In certain cases, however, such provisions lessen incentives to work and save for retirement, and can weaken the country's economy over time. In addition, the way in which new provisions are implemented, administered, and explained to the public affects the outcome of the reform. For example, most countries phase in changes to the national pension programs, such as changing the retirement age over a certain period of time. Governments such as the United Kingdom have had only limited success in efforts to educate workers about changes in provisions that will affect their retirement income.

Where countries created national reserves to partially prefund PAYG pension programs, many lessons can be drawn, including the importance of early action and sound governance. In some countries where

requirements for prefunding through national reserves have been in place for a long time and have been complemented by other reform measures, significant amounts of money have already accumulated.[5] These are projected to help make substantial contributions to the financial sustainability of national pension programs. While acting early in setting up national reserve funds helps maintain adequate benefits and distribute pension costs more equitably across generations, governing these funds in the interest of participants is also crucial. Countries that insulate national reserve funds from being directed to meet nonretirement objectives are better equipped to fulfill their future pension commitments. Some countries have legislated specific starting dates for drawing down national funds to resist demands for their immediate use. Effective governance of national funds also requires that governments commit to making regular transfers into these funds. Countries that count on budget surpluses to finance their reserve funds will need strong and sustained budgetary discipline to accumulate enough reserves to prepare for future pension spending requirements. Moreover, where transfers to national funds are limited to social security surpluses, reserve funds may not grow sufficiently to help national pension systems become solvent. In addition, regular disclosures of fund performance help achieve transparency in management and administration and contribute to public education and oversight.

The countries adopting individual account reforms offer lessons about the importance of addressing the financial solvency of existing PAYG pension systems as the accounts are established. Countries adopting individual accounts face the common challenge of how to pay for both a new funded pension and an existing PAYG pension simultaneously. Some countries did this by expanding public debt, building up budget surpluses, cutting back or eliminating the PAYG system, or using some combination of these approaches. Additionally, two countries, Australia and Switzerland, used new sources of funding to add individual accounts to their existing system. Because no individual account program can fully protect individuals from investment risk, some countries protect the overall level of benefits. For example, some have adopted individual accounts as a relatively small portion of their national pension system. Others that rely more heavily on

[5] Asset allocation varies greatly across countries. The U.S. Social Security Trust Fund, for example, is exclusively invested in nonmarketable government securities; on the other hand, countries such as Canada and Sweden invest a large fraction of their reserve fund assets in equities. Moreover, several countries, such as New Zealand, diversify their portfolios to include a significant portion of foreign shares.

individual accounts, including Chile and Australia, set minimum rates of return or provide a minimum benefit. While these provisions are intended to protect individuals, they may also have unintended consequences. For example, guaranteed rates of return imposed on fund managers in some countries have been done in a way that may limit investment diversification and variation in individuals' returns (in Chile and Switzerland, for example). In addition, important lessons can be learned regarding the administration of individual accounts, including the need for effective regulation and supervision of the financial industry to minimize investment risks that individuals face. To mitigate high fees that can erode small account balances, some countries have capped the level of administrative fees. Information about individual accounts should be provided to help individuals make informed decisions about their retirement savings. Some countries have done a better job than others in providing information about their individual account programs. Additionally, although studies in some countries indicate that many individuals have only limited knowledge about their retirement prospects, several countries have programs to provide information on investment choices and retirement income options, such as annuities. The effectiveness of these programs is unclear, however.

We received technical comments from the Social Security Administration, the Department of Treasury, the OECD, and other external reviewers and incorporated them where appropriate.

## Background

The U.S. Social Security program's projected long-term financing shortfall stems primarily from the fact that people are living longer and having fewer children. As a result, the number of workers paying into the system for each beneficiary is projected to decline. A similar demographic trend is occurring or will occur in all OECD countries. (See table 3 in app. II for demographic and other characteristics of OECD countries and Chile.) Although the number of workers for every elderly person (aged 65 and over) in the United States has been relatively stable over the past few decades, this ratio has already fallen substantially in other developed countries. The number of workers for every elderly person in the United States is projected to fall from 4.1 in 2005 to 2.9 in 2020 and to 2.2 in 2030. In nine of the OECD countries, this number has already fallen below the

level projected for the United States in 2020.[6] These decreases in the projected number of workers available to support each retiree could have significant effects on countries' economies, particularly during the period from 2010 to 2030. These effects may slow growth in the economy and standards of living, and increase costs for aging-related government programs. Long run demographic projections are imprecise, however, due to uncertainty about future changes in longevity, for example.

## Pension and Other Social Insurance Programs in OECD Countries

Although social security programs in all OECD countries and Chile provide benefits for qualified elderly people, survivors, and the disabled, the programs differ in many respects across the countries. In some countries, "social security" refers to a wide range of social insurance programs, including health care, long-term care, workers' compensation, unemployment insurance, and so forth. To generalize across countries, we use "national pensions" to refer to mandatory countrywide pension programs providing old-age pensions. We use "Social Security" to refer to the U.S. Old-Age, Survivors, and Disability Insurance Program, since that is how the program is commonly known.

Although nearly all OECD countries use contributions from workers and employers designated to finance pension benefits, most also use general revenues as a funding source. Nearly all OECD countries, including the United States, make pension benefits dependent on an individual's work history, while several also provide benefits to all qualified residents whether or not they have a work history. Countries' pension systems may be financed differently, use different criteria for identifying qualified beneficiaries, and calculate benefits in a different manner. Several OECD countries finance benefits to the disabled or survivors with worker or employer contributions designated for this purpose. Others use general revenue to finance these benefits or have a single fund that provides old-age pension benefits and benefits for the disabled and survivors. Some OECD countries provide a universal benefit of a specified amount each week or each month. Some adjust benefits based on time spent raising children, or pursuing education, as well as years spent working. Some

[6] The Social Security Administration (SSA) uses a somewhat different ratio—the number of workers covered by the Social Security program for each Social Security beneficiary. In 2004 there were 3.3 such workers for each SSA beneficiary, and SSA projects that this ratio will decline to 2.1 in 2031, based on the intermediate assumptions of the 2005 trustees' report. SSA's projections take into account the effects of gradual increases in retirement age for those born after 1937, with a retirement age of 67 for those born in 1960 or later.

national pension programs, identified as "defined benefit" programs, provide retirees a pension of a set amount per week or month or an amount calculated based on such factors specified by law as their number of years of work and the level of their earnings or contributions, and their age at retirement. Other national pension programs, identified as "defined contribution" programs, provide retirees income based on the accumulated value of contributions and investment earnings on those contributions. Many OECD countries have a pension system that includes a combination of pension programs rather than a single program, providing many retirees with more than one source of income. (See table 4 in app. II for additional information concerning countries' national pension systems.)

Voluntary occupational pension programs are common in many OECD member countries though the aggregate accumulated value of these pension funds exceeds 25 percent of gross domestic product (GDP) in only seven countries, including the United States, Canada, and Denmark. These include programs sponsored by employers, trade associations, or trade unions and regulated by governments; in some cases, the pensions provided by these programs are to some extent insured by governmental entities—counterparts to the Pension Benefit Guaranty Corporation in the United States. Tax laws in many countries encourage participation in these voluntary programs. Germany, for example, supplements its national pension system with voluntary individual "Riester" accounts, supported by subsidies as well as tax incentives. Our review, however, did not include these programs, except in the United Kingdom, where workers' contributions to PAYG national pension programs are reduced if they choose to participate. Where these voluntary programs are prevalent, they can affect countries' decisions about public pension reforms.

## Types of National Pension Reform

Historically, developed countries have relied on some form of a PAYG national pension program.[7] Over time, countries have used a variety of approaches to respond to demographic challenges and the ensuing increases in expenditures for these programs. In many cases, these approaches provide a basic or minimum benefit as well as a benefit based on the level of a worker's earnings. Several countries are preparing to pay

[7]Some countries, such as Germany, originally had pre-funded national pension programs providing modest benefits, but pension reserves diminished as they increased the level of benefits.

future benefits by either supplementing or replacing their PAYG programs. For example, some have set aside and invested current resources in a national pension reserve fund to partially prefund their PAYG program. Some have established fully funded individual accounts. These are not mutually exclusive types of reform. In fact, many countries have undertaken more than one of the following types of reform (see table 1 for the reforms OECD countries and Chile have undertaken):[8]

- **Adjustments to existing pay-as-you-go systems**. Typically, these are designed to create a more sustainable program by increasing contributions or decreasing benefits, or both, while preserving the basic structure of the system. Measures include phasing in higher retirement ages, equalizing retirement ages across genders, and increasing the earnings period over which initial benefits are calculated. Some countries have created notional defined contribution (NDC) accounts for each worker, which tie benefits more closely to each worker's contributions and to factors such as life expectancy and the growth rate of the economy.

- **National pension reserve funds**. These are set up to partially prefund PAYG national pension programs.[9] Governments commit to make regular transfers to these investment funds from, for example, budgetary surpluses. To the extent that these contribute to national saving, they reduce the need for future borrowing or for large increases in contributions to pay scheduled benefits. Funds can be invested in a combination of government securities and domestic as well as foreign private sector securities. Because of differences in accounting practices, some countries report reserve funds as part of national budgets while others do not include them in federal figures.[10]

- **Individual accounts.** These are fully funded accounts that are administered either by employers, the government, or designated third parties and are owned by the individual. The level of retirement benefits depends largely on the amount of contributions made by, or on behalf of, an individual into the account during his or her working life, investment earnings, and the amount of fees individuals are required to pay.

[8]This list of types of reform is not comprehensive. Some countries, Norway, for example, recently adopted legislation requiring employers to provide pensions (usually defined benefit programs) for employees.

[9]A fully prefunded pension program would no longer be a PAYG system.

[10]The Netherlands, New Zealand, and the United States are examples of countries that incorporate reserve funds into national budgets; Canada and Finland, for instance, do not.

**Table 1: Countries' National Pension Reforms—1970-2004**

| Groups of countries undertaking different types of reform | | | |
|---|---|---|---|
| **Only adjustments to PAYG** | **Adjustments to PAYG and national pension fund** | **Adjustments to PAYG and individual accounts** | **Adjustments to PAYG, national pension fund, and individual accounts** |
| Austria | Belgium | Australia | Denmark |
| Czech Republic[a] | Canada | Chile[b] | Sweden |
| Italy | Finland | Hungary | Switzerland[c] |
| Germany[d] | France | Iceland[e] | |
| Turkey | Greece | Mexico | |
| | Ireland | Poland | |
| | Japan | Slovak Republic | |
| | Luxembourg | United Kingdom[f] | |
| | Netherlands | | |
| | New Zealand[g] | | |
| | Norway[h] | | |
| | Portugal | | |
| | South Korea | | |
| | Spain | | |
| | United States | | |

Source: OECD, International Social Security Association, and Social Security Administration.

[a]The Czech Republic's defined contribution account program is not included as an individual account reform as it is a voluntary supplementary program. For a discussion of these accounts, see GAO, *Social Security Reform: Information on Using a Voluntary Approach to Individual Accounts*, GAO-03-309 (Washington, D.C.: Mar. 10, 2003), pp. 46-54.

[b]Chile is not an OECD country, but was included in our study because it pioneered individual account reforms.

[c]Switzerland's mandatory occupation-based pensions provide individual accounts that accrue credits at least at a minimum prescribed interest rate. The program's requirements are phrased in terms of individual accounts and the consulting actuaries must make an individual account calculation applying the differing contribution rates per age bracket in order to determine compliance with the law. But in fact many companies offer plans that work like defined benefit pensions. Benefits are based on the notional balance of the account at retirement.

[d]Germany's Riester pension program is not included as an individual account reform because it is a supplement to the mandatory national pension program, rather than an alternative. For a discussion of these accounts, see GAO-03-309, pp. 55-63.

[e]Iceland's mandatory occupation-based pension program allows for the creation of defined contribution individual accounts as a complement to defined benefit pensions. However, in practice, employers have not yet established these. Voluntary supplementary individual accounts are also available.

[f]The United Kingdom requires participation in either a state earnings-related pension program or an approved alternative, including an individual account.

[g]New Zealand's national pension is technically not a PAYG program as it is funded with general government revenue rather than workers' or employers' contributions to the program.

[h]Norway's Petroleum Fund is not, by law, dedicated exclusively to future pension expenditures, but it is regarded as a fund to meet the future expenses of an aging society, including pensions.

## Adjustments to Existing PAYG Programs Show Importance of Sustainability, Safety Nets, and Incentives to Work and Save

The countries that have adjusted their existing PAYG national pension programs demonstrate a broad range of approaches for both reducing benefits and increasing contributions in order to improve the programs' financial sustainability. Their experiences also provide lessons about the potential effects of some adjustments on the distribution of benefits, including the maintenance of a safety net and incentives to work and save. They also emphasize the care required in implementing and administering reforms and ensuring that the public understands the new provisions.

### PAYG Adjustments Prove Key to Financial Sustainability

To reconcile PAYG program revenue and expenses, nearly all the countries we studied have decreased benefits, and most have also increased contributions, often in part by increasing retirement ages. Generally countries with national pension programs that are relatively financially sustainable, based on estimated changes in spending on old-age pensions, have undertaken a package of several far-reaching adjustments.[11] Most of the countries we studied increased program revenue by raising contribution rates, increasing the range of earnings or kinds of earnings subject to contribution requirements, or increasing the retirement age. Most of these countries increased contribution rates for some or all workers. Canada, for example, increased contributions to its Canadian Pension Plan from a total of 5.85 percent to 9.9 percent of wages, half paid by employers and half by employees. Several countries, including the United Kingdom, increased contributions by expanding the range of earnings subject to contribution requirements.

Nearly all of the countries we studied decreased the promised level of benefits provided to future retirees, using a wide range of techniques. Some techniques reduce the level of initial benefits; others reduce the rate at which benefits increase during retirement or adjust benefits based on retirees' financial means.

[11]OECD has assessed the financial sustainability of most OECD member countries' pension systems by projecting the change in spending needed to support the old-age pension programs through 2050. For details, see table 4 in app. II.

- *Increased years of earnings*. To reduce initial benefits, several countries increased the number of years of earnings they consider in calculating an average lifetime earnings level. France previously based its calculation on 10 years but increased this to 25 years for its basic public program. Austria is gradually increasing the number of years from 15 to 40 years.

- *Increased minimum years of contributions*. Another approach is to increase the minimum number of years of creditable service required to receive a benefit. France increased the required number of years from 37.5 to 40 years. Belgium is increasing its minimum requirement for early retirement from 20 to 35 years.

- *Changed formula for calculating benefits*. Another approach to decreasing the initial benefit is to change the formula for adjusting prior years' earnings. Countries with traditional PAYG programs all make some adjustment to the nominal amount of wages earned previously to reflect changes in prices or wages over the intervening years. Although most of the countries we studied use some kind of average wage index, others, including Belgium and France, have adopted the use of price indexes. The choice of a wage or price index can have quite different effects, depending on the rate at which wages increase in comparison with prices. The extent to which wages outpace prices varies over time and among countries.

- *Changed basis for determining year-to-year increases in benefits once retirement begins*. In many of the countries we studied, the rate at which monthly retirement benefits increase from year to year during retirement is based on increases in prices, which generally rise more slowly than earnings. Others—including Denmark, Ireland, Luxembourg, and the Netherlands—use increases in earnings or a combination of wage and price indexes. Hungary, for example, changed from the use of a wage index to the Swiss method—an index weighted 50 percent on price changes and 50 percent on changes in earnings.

- *Implemented provisions that adjust benefits in response to economic and demographic changes*. Adjustments, which link benefits to factors such as economic growth, longevity, or the ratio of workers to retirees, may contribute to the financial sustainability of national pension systems.[12] Finland and Germany, for example, have adopted adjustment mechanisms of this kind. In some countries, such as Italy and Sweden, this approach

[12]Increases in life expectancy, decreases in birth rates, or decreases in real (inflation adjusted) interest rates can reduce the level of benefits that a pension program can provide at a given tax (contribution) rate.

takes the form of a notional defined contribution program. Italian and Swedish workers have "notional" accounts in that both the incoming contributions and the investment earnings exist only on the books of the managing institution. At retirement, the accumulated notional capital in each account is converted to a stream of pension payments using a formula based on factors such as life expectancy at the time of retirement.

Most of the countries we studied undertook more than one of these types of reforms as indicated in table 2. See table 5 in appendix II for additional information concerning adjustments to PAYG programs.

**Table 2: Countries Undertaking Selected Types of Adjustments to their PAYG Pensions—1970-2004**

| Country | Increase in contribution rates or coverage | Increase in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit | Change in indexation for benefits during retirement | Other adjustment mechanisms linking initial level of benefits to demographic or economic factors | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Australia | | X | | | | | X |
| Austria | X | | X | | X | | X |
| Belgium | | X | X | X | | | |
| Canada | X | | X | X | | | X |
| Chile | X | X | | | | | |
| Czech Republic | | X | | | X | | |
| Denmark | X | | | | | | X |
| Finland | X | X | X | | X | | X |
| France | X | | X | X | X | X | |
| Germany | X | X | | | X | X | X |
| Greece | X | X | X | | | | X |
| Hungary | | X | X | | X | | X |
| Iceland | | | | | | | X |
| Ireland | X | | | | | | |
| Italy | X | X | X | X | X | X | X |
| Japan | X | X | X | | X | | X |
| Luxembourg | X | | | X | | | X |
| Mexico | X | | X | | | | |
| Netherlands | X | | X | | X | | X |
| New Zealand | | X | | | | | X |
| Norway | X | | | | | | X |
| Poland | | | | | X | X | |

| Country | Increase in contribution rates or coverage | Increase in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit | Change in indexation for benefits during retirement | Other adjustment mechanisms linking initial level of benefits to demographic or economic factors | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Portugal | | X | X | | | | X |
| Slovak Republic | X | X | X | | | X | |
| South Korea | X | X | X | | | | |
| Spain | X | X | X | | | | X |
| Sweden | | X | | | | X | |
| Switzerland | | X | | | | | X |
| Turkey | | X | X | | | | X |
| United Kingdom | X | X | X | | X | | X |
| United States | X | X | | X | X | | X |

Source: OECD, International Social Security Association, and individual government sources.

[a]Generally, increasing the retirement age both increases lifetime contributions and decreases lifetime benefits, as people remain in the workforce for a longer period and spend a shorter period in retirement, without changes in monthly contribution rates or benefit amounts.

Several countries, such as Sweden and the United Kingdom, have undertaken one or more of these adjustments to their PAYG programs and have achieved, or are on track to achieve, relative financial sustainability. Other countries, including France, and Germany, may need to take additional action to finance future benefit commitments. Generally, the countries that have come closest to achieving sustainability are those that have undergone more than one type of national pension reform.

## Essential Reform Elements Include Maintenance of a Safety Net and Work and Saving Incentives

All of the countries we studied that reformed their PAYG pension programs by reducing projected benefits included provisions to help ensure adequate benefits for lower-income groups and put into place programs designed to ensure that all qualified retirees have a minimum level of income.[13] Most did so by providing a means-tested program that provides more benefits to retirees with limited financial means. Two countries—Germany and Italy—provide retirees access to general social welfare programs that are available to people of all ages rather than providing programs with different provisions for elderly people.

[13]The adequacy of pension benefits can be evaluated both in terms of their minimum level and the extent to which they replace earnings. For more information on projected replacement rates for OECD pensions systems, see table 4 in app. II.

Twelve countries use another approach to providing a safety net: a basic retirement benefit. The level of the benefit is either a given amount per month for all retirees or an amount based on years of contributions to the program (but not the level of earnings during those years). In Ireland, for example, workers who contribute to the program for a specified period receive a flat-rate pension equal to about 167 euros a week in 2004—approximately one-third of average earnings.[14] According to the Social Security Administration (SSA), Chile set a minimum pension for those younger than age 70 at 62.7 percent of the minimum wage in 2004. The United Kingdom and Belgium give low-income workers credit equivalent to the minimum level contribution even though their earnings were too low to require a contribution. Several countries give workers credit for years in which they were unemployed, pursued postsecondary education, or cared for dependents. Establishing a safety net requires a careful consideration of costs and incentives for working and saving. Costs can be high if a generous basic pension is provided to all eligible retirees regardless of their income. On the other hand, means-tested benefits can diminish incentives to work and save. The United Kingdom provides both a basic state pension and a means-tested pension benefit. Concern about the decline in the proportion of preretirement earnings provided by the basic state pension has led some to advocate making it more generous. Others argue that focusing safety net spending on those in need enables the government to alleviate pensioner poverty in a cost-effective manner.

Prior to 2003, retirees in the United Kingdom received a means-tested benefit that brought their income up to a guaranteed minimum retirement income level. This benefit left those retirees with low to moderate incomes no financial incentive to work or save, because additional income was offset by equal reductions in the means-tested benefit.[15] To help remedy this, the United Kingdom introduced the savings credit, which provides a supplementary benefit equal to a portion of an individual's additional income within a range near the guaranteed retirement income level. This new benefit increases, but does not fully restore, the incentive to work and save because a portion of the additional income is lost through reductions in pension income. If, for example, a retiree with pre-benefit income of

[14]This was the equivalent of about $203 a week in mid-2004. To qualify for this basic benefit, the retiree must have 260 weeks of paid contributions, with an annual average of at least 48 weeks of paid or credited contributions.

[15]The lack of a financial incentive applies up to the point at which the retiree has sufficient income or assets that they no longer qualify for the benefit.

$700 a month increases this income to $800 a month, his or her total retirement income including these means-tested benefits would increase by $60, from $892 to $952. The proportion of United Kingdom pensioners eligible for these means-tested benefits is expected to rise. The United Kingdom Pensions Commission projects that unless current pension rules are changed, almost 65 percent of retiree households will be eligible for these means-tested benefits by 2050, because the increases in the Basic State Pension are linked to prices, but increases in other components of the United Kingdom's pension system are linked to earnings.

## Successful Reform Requires Careful Implementation, Administration, and Public Education

The extent to which new provisions are implemented, administered, and explained to the public may affect the outcome of the reform. Although many adjustments to PAYG programs are not difficult to implement and administer, some more complex reforms, such as the development of a notional defined contribution program, can be challenging. Poland, for example, adopted NDC reform in 1999, but the development of a data system to track contributions has been problematic. As of early 2004, the system generated statements documenting contributions workers made during 2002, but there was no indication of what workers had contributed in earlier years or to previous pension programs. Without knowing how much they have in their notional defined accounts, workers may have a difficult time planning for their retirement. Additionally, countries typically phase in certain changes, such as increasing the retirement age. This could help to provide workers with enough time to understand how the changes to the pension program will affect their retirement income.

To educate workers about how PAYG programs and PAYG reforms affect them, countries including Canada, Sweden, the United Kingdom, and the United States, send workers periodic statements concerning the program, the record of their contributions to it, and the benefits they are projected to receive.[16] To increase the likelihood that recipients will read and understand them, the United Kingdom provides different messages tailored to workers of different ages. Nonetheless, the United Kingdom has had limited success in efforts to educate workers about changes in provisions that will affect their retirement income. For example, a survey of women in the United Kingdom showed that only about 43 percent of women who will be affected by an increase in the retirement age knew the

[16]For a discussion of the understandability of benefit statements in Canada, Sweden, the United Kingdom and the United States, see GAO, *Social Security Statements: Social Security Administration Should Better Evaluate Whether Workers Understand Their Statements*, GAO-05-192 (Washington, D.C.: Apr. 1, 2005).

age that applied to them. A large proportion (70 percent) of younger women indicated that they expect to retire before their state pension eligibility age—65 years.[17]

## Early Action and Effective Management Help Strengthen National Pension Reserve Funds

Another measure often found in reform packages is the accumulation of reserves in national pension funds with the aim of partially prefunding PAYG pension programs. With public centralized prefunding, governments set aside resources in the current period to safeguard the financing of their PAYG pension programs in the future. Typically invested in various combinations of bonds and equities, these reserve funds are in some cases meant to remain untouched for several years before being channeled into the public pension system, in particular to maintain adequate pension levels for the baby boom cohort. Pension reserve funds can contribute to the system's financial sustainability, depending on when they are created or reformed, as well as how they are invested and managed. Countries that took action early have had time to amass substantial reserves, reducing the risk that they will not meet their pension obligations. Effective management of reserve funds has also proved important, as a record of poor fund performance has led some countries to put reserve funds under the administration of a relatively independent manager with the mandate to maximize returns and minimize avoidable risk.[18]

### Early Action Matters

Establishing reserve funds ahead of demographic changes—well before the share of elderly in the population increases substantially—makes it more likely that enough assets will accumulate to help meet future pension obligations. In countries such as Sweden and Denmark, which have had long experience with partial prefunding of PAYG programs, important reserves have already built up. Combined with long-term policies aimed at ensuring sound public finances, raising employment rates, and adjusting pension program provisions, these resources are expected to make significant contributions to the long-term finances of

[17] In contrast only 7 percent of the women who were not affected by the increase expected to retire before they reached the state pension age that applied to them (60 years).

[18] While some investment risks are unavoidable, other kinds of risks can be minimized by diversifying the portfolio among asset classes, for example stocks, bonds, and real estate, and within asset classes.

public pension programs.[19] For example, Denmark's reserve fund, set up in 1964, had assets equivalent to about 25 percent of GDP in 2000. Sweden's reserve fund, created in 1960, was around 24 percent at the end of 2003.

Other countries that have recently created pension reserve funds for their pension programs have a shorter period in which to accumulate reserves before population aging starts straining public finances. In particular, the imminent retirement of the baby boom generation is likely to make it challenging to continue channeling a substantial amount of resources to these funds. France, for example, relies primarily on social security surpluses to finance its pension reserve fund set up in 1999. Given its demographic trends, however, it may be unable to do this beyond the next few years. Similarly, Belgium and the Netherlands plan on maintaining budget surpluses, reducing public debt and the interest payments associated with the debt, and transferring these earmarked resources to their reserve funds. However, maintaining a surplus will require sustained budgetary discipline as a growing number of retirees begins putting pressure on public finances. Some countries have set specific starting dates for drawing down national funds to resist demands for their immediate use.

Though the Irish National Pensions Reserve Fund was established in 2001, as of 2004 it had already amassed substantial assets, nearly 10 percent of GDP. Its resources are projected to support the financial sustainability of the pension program for two main reasons. First, Ireland enjoys relatively favorable demographics. Its aging problem is expected to increase in severity at a later date than those of other Western European countries; thus, it has in effect created its pension fund relatively early, with more time for returns to accumulate. Second, Ireland provides somewhat less generous public pensions to their beneficiaries than other OECD countries; its pension spending is, therefore, relatively low.

## Effective Management Can Contribute to Financial Sustainability

Examples from several countries reveal that prefunding with national pension reserve funds is less likely to be effective in helping assure that national pension programs are financially sustainable if these funds are also used for purposes other than supporting the PAYG program. Some countries have used funds to pursue industrial, economic, or social

[19] If however, policymakers increase deficit spending or decrease surpluses in the rest of the government's budget in response to the accumulation of pension reserves, the prefunding benefits of the reserve will be offset.

objectives. For example, Japan used its reserve fund to support infrastructure projects, provide housing and education loans, and subsidize small and medium enterprises.[20] As a result, Japan compromised to some extent the principal goal of public prefunding, which is to save in advance and accumulate assets so as to continue providing adequate benefits to retirees while keeping contribution rates of workers stable. Japan has since implemented a series of reforms. The latest wave, which became effective in 2001, refocused the fund's objective in the interests of participants, rather than those of the general public. Measures introduced include management improvements and more aggressive investment strategies with the aim of maximizing returns.

Past experiences have also highlighted the need to mitigate certain risks that pension reserve funds face, in addition to the risks that are inherent in investment of any pension funds. One kind of risk has to do with the fact that asset buildup in a fund may lead to competing pressures for tax cuts and spending increases, especially when a fund is integrated into the national budget.[21] For instance, governments may view fund resources as a ready source of credit. As a result, they may be inclined to spend more than they would otherwise, potentially undermining the purpose of prefunding. For example, according to many observers, the United States' Social Security trust fund, which is included in the unified budget and invested solely in U.S. Treasury securities that cannot be bought or sold in the open market, may have facilitated larger federal budget deficits. Ireland sought to alleviate the risk that its reserve fund could raise government consumption by prohibiting investment of fund assets in Irish government bonds. Some economists argue in favor of similar limits on the share of domestic government bonds the fund portfolio can hold.

Additionally, pension reserve fund investments in private securities can have negative effects on corporate governance. There is the danger that if the government owns a significant percentage of the stocks of individual companies and as a result controls their corporate affairs, the best interest

[20]Apart from a national fund for pension reserves, with a balance equal to about 28 percent of GDP as of 2003, Japan has accumulated savings through Japan Post, a national corporation with a large savings program. Japan Post's assets (50 percent of GDP in fiscal year 2003) included postal savings and life insurance.

[21]The fact that reserve funds are sometimes accumulated separately from the budget does not entirely relieve the pressure to use them for current consumption. So far, no country has managed to completely "wall off" its fund from at least the pressure to divert some of the proceeds for program priorities or tax cuts.

of shareholders may not be upheld because of potential conflicts of interest. Limiting the government's stock voting rights by investing national pension resources in broad index funds may provide a safeguard against this type of risk.

Another risk is that groups may exert pressure to constrain fund managers' investment choices, potentially lowering returns. For example, Canada and Japan have requirements to invest a minimum share of their fund portfolios in domestic assets, restricting holdings of foreign assets to stimulate economic development at home. In contrast, Norway chose to invest its fund reserves almost exclusively in foreign assets.[22] The funds of Ireland and New Zealand also have large shares of foreign investments.[23] Investing a significant share of reserves in foreign assets may not be a realistic or viable option for large economies with mature financial markets, such as the United States. Funds in several countries have also faced pressure to adopt ethical rather than purely commercial investment criteria, with a possibly negative impact on returns.[24] In recent years, some countries have taken steps to help ensure that funds are managed to maximize returns and minimize avoidable risk. Canada, for example, has put its fund under the control of an Investment Board operating independently from the government since the late 1990s. Several countries, including New Zealand, have taken steps to provide regular reports and more complete disclosures concerning pension reserve funds which may help achieve transparency in management and administration and contribute to public education and oversight.[25] (For additional information concerning national pension reserve programs, see fig. 1 and table 6 in app. II.)

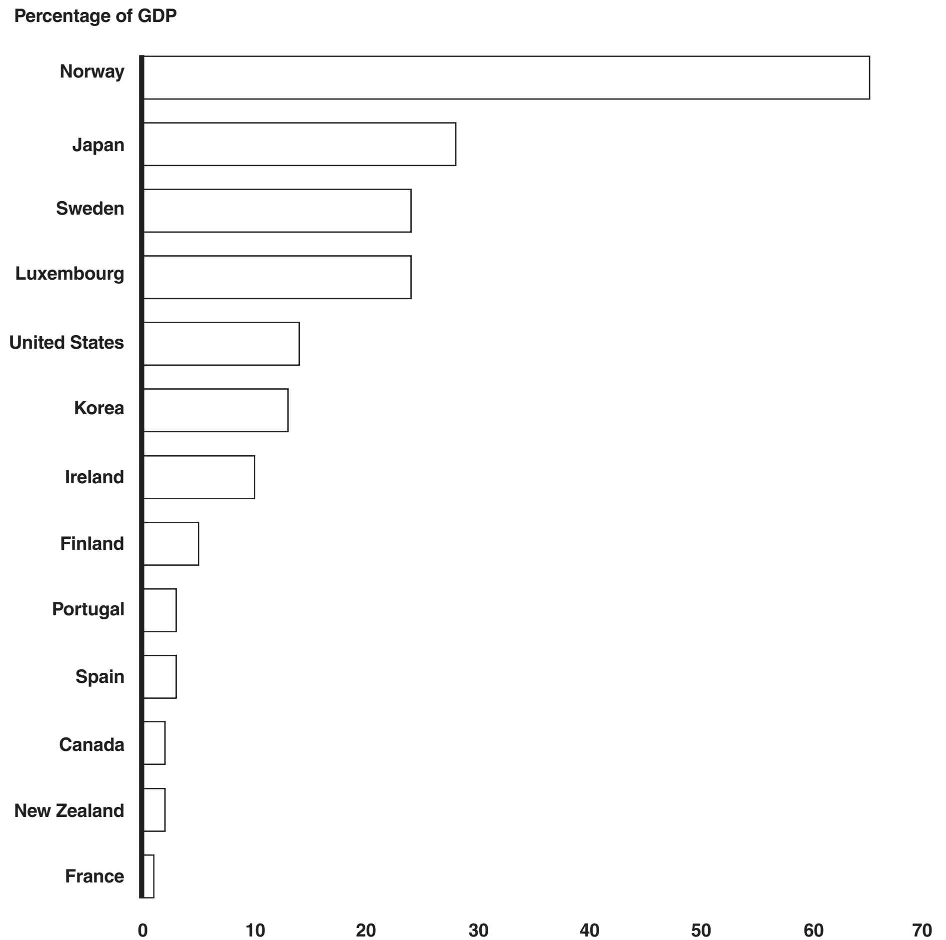
[22]Although the Norwegian Government Petroleum Fund is not a pension fund per se, its assets are designated to deal with the impact of population aging.

[23]Investing abroad also helps lower the risk that funds will distort domestic capital markets. On the other hand, there is a risk that changes in exchange rates will decrease the value of foreign investments.

[24]New Zealand and Sweden are examples of countries stating explicitly that ethical considerations must be taken into account in investment policy.

[25]Maintaining high standards of transparency and disseminating accurate information contribute to public education and oversight, providing some degree of discipline to fund management.

**Figure 1: National Pension Reserve Funds as a Percentage of GDP**




Source: OECD and individual government sources.

Note: The figure for Finland excludes the statutory pension funds (58.3% of GDP). Figures as of 2003, except as follows: as of December 31, 2000, for Portugal, as of December 31, 2004, for Spain, Ireland, the United States, and Norway.

## Individual Account Reforms Show the Importance of Funding Decisions and Benefit Adequacy

Countries that have adopted individual account reforms—which may also help prefund future retirement income—offer lessons about financing the existing PAYG pension program as the accounts are established. To manage this transition period these countries have expanded public debt, built up budget surpluses in advance of implementation, reduced or eliminated the PAYG program, or used some combination of these approaches. Another important consideration for countries that have individual account programs is how to balance achieving high rates of

return while ensuring individuals receive an adequate level of benefits. Measures such as limits on how the funds are invested and the level of fees and charges may help to ensure that benefits will be adequate, but should not be so restrictive that they unduly harm individuals or pension fund managers. In addition, administering individual accounts requires effective regulation and supervision of the financial industry to protect individuals from avoidable investment risks. Educating the public is also important as national pension systems become more complex.

## Approach to Funding Individual Accounts Affects Sustainability of National Pension System

The experiences of other countries demonstrate the importance of considering how individual accounts may affect the long-term and short-term financing of the national pension system and the economy as a whole. In the long-term, individual accounts can contribute to sustainability by providing a mechanism to prefund retirement benefits that could be less subject to demographic booms and busts than a PAYG approach. Individual accounts prefund benefits in private accounts rather than government accounts. If governments are unable to save through national pension reserves, private accounts may facilitate pre-funding that would not occur otherwise.[26] If, however, such accounts are funded through borrowing, no such prefunding is achieved. In the short-term countries adopting individual accounts face the common challenge of how to pay for both a new funded pension and an existing PAYG pension simultaneously. The cost of the transition from a PAYG program to individual accounts depends on whether the individual accounts redirect revenue from the existing PAYG program, the amount of revenue redirected, and how liabilities under the existing PAYG program are treated.

The countries we studied vary in the amount of revenue diverted from their PAYG programs to fund their individual accounts, resulting in a range of related transition costs. Australia and Switzerland used new sources of funding to add individual accounts to their existing, relatively modest,

[26]The extent to which individual account programs can contribute to national saving is not yet clear, however. Some studies of Chile's individual account program have concluded that it has contributed to national saving rates. Other studies provide less clear evidence that individual account programs contribute to national saving rates, in part because saving in individual accounts can displace other forms of saving. Accounting issues also cloud the evidence.

national pension systems.[27] Transition costs were not an issue, because no resources were diverted from paying current benefits. Nonetheless, new financing was needed to both fund the new program and to support the existing program. (For additional information concerning these "add-on" programs and other countries' individual account programs, see table 7 in app. II.) Some countries diverted revenue from the existing PAYG program to the individual accounts, a "carve out," resulting in shortfalls that reflect, in part, the portion of the PAYG program being replaced with individual accounts. For example, transition costs may be less in countries such as Sweden where the contribution to individual accounts is 2.5 percent of covered earnings, than for Poland or Hungary, which have contribution rates of 7.3 percent and 8 percent, respectively.

In addition to the level of transition costs resulting from redirecting PAYG revenue, how a country manages these costs also affects the success of the reform. All of the countries we reviewed also made changes that were meant to help finance the transition to individual accounts, such as increasing contributions to or decreasing benefits from their PAYG programs. In addition, Chile built a budget surplus in anticipation of major pension reform, and Sweden had large budget surpluses in place prior to establishing individual accounts. Some countries transferred funds from general budget revenues to help pay benefits to current and near retirees, expanding public borrowing. Where they financed individual accounts through borrowing, these countries will not positively affect national saving until the debt is repaid, as contributions to individual accounts are offset by increased public debt.[28] For example, Poland's debt is expected to exceed 60 percent of GDP in the next few years, in part because of its public borrowing to pay for the movement to individual accounts.

Countries sometimes had difficulty predicting their transition costs. In particular, countries that allowed workers to opt in or out of individual account programs had difficulty estimating costs. For example, more workers in the United Kingdom, Hungary, and Poland responded to incentives to contribute to individual accounts than originally anticipated, leaving the existing PAYG programs with less funding than planned.

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[27]Australia's national PAYG program consistently replaces approximately 25 percent of average wages (23 percent in 2005); Switzerland's national PAYG program replaced approximately 36 percent of average wages in 2005.

[28]Additionally, increased government debt may crowd out private-sector access to lending markets and dampen the economic growth individual accounts are meant to generate.

Hungary's short-run fiscal concerns resulted in a slower increase in contribution rates to individual accounts than originally planned.

Regardless of whether workers have a choice of participating in the program, individual accounts may also affect the long-term costs to the government. For example, if income from substitute accounts leaves particular individuals with less retirement income than if they had not participated, some may qualify for benefits from other means-tested programs. On the other hand, to the extent that the accounts increase retirement incomes, costs for such programs may fall. Under a voluntary approach, such effects could depend partly on the rate of participation. The actual effect of countries' individual account programs on other programs as they relate to government spending will not be clear for years to come, when cohorts of affected workers retire.

## Countries Balanced Opportunities to Realize High Expected Returns with Provisions to Help Ensure Benefit Adequacy

Countries adopting individual accounts as part of their national pension systems have had to make trade-offs between giving workers the opportunity to maximize expected returns in their accounts and helping assure that benefits will be adequate for all participants. Some countries set a guaranteed rate of return to reduce certain investment risks and help ensure adequacy of benefits. Guaranteed rates of return may be relative, that is, related to other funds' returns, as in Chile, or fixed—a guaranteed percentage rate return, as in Switzerland. In Chile workers with individual accounts are guaranteed a minimum rate of return set at 2 percentage points below the average return for funds of the same type during a 3-year period.[29] In Switzerland, account holders were assured a minimum rate of return of 2.25 percent in 2004.[30] This type of guarantee may, however, result in limited investment diversification or conservative investment decisions, resulting in lower rates of return overall. In Chile, for example, the guaranteed return may have resulted in a "herding" effect, creating an incentive for fund managers to hold similar portfolios and reducing variation in returns. To help ensure that individuals receive at least a benefit based on the guaranteed rate of return, several countries require

[29]Previously, Chile's rate of return guarantee was calculated over a 12-month period. The Chilean association of the fund managers reported that the average annual real (inflation-adjusted) rate of return on funds in the individual accounts, before deducting administrative fees, was 10.3 percent during the 24 years since the inception of the program.

[30]Switzerland originally set its minimum return guarantee at 4 percent. However, because of funding problems from lower than expected yields on investments, it gradually lowered its rate to the current 2.25 percent.

fund managers to have reserve funds to pay benefits at the guaranteed return level. A number of these countries have further provisions that the government will provide benefits if all of the fund reserves are used.

Another measure to ensure retirees will have at least a minimally adequate level of income is to provide some form of minimum guaranteed benefit. All countries with individual accounts that we reviewed provide such a benefit. This can be increasingly important as individuals assume risks with the investment of funds in their individual accounts. Some experts believe that a minimum pension guarantee could encourage investors to select riskier investments or spend their assets more quickly. For example, in countries with a large flat-rate pension, individuals may make risky investment decisions because they can rely on the guarantee if their risk taking brings poor results. In countries where additional benefits are added on to the individual account payment to meet a minimum standard ("top-up" benefits) individuals may minimize their voluntary contributions in order to receive a higher benefit from the government. There is some belief that this may occur in Chile, where low-income workers might try to stop making contributions after meeting the contribution year requirement. Individuals in countries with a means-tested benefit may spend down their retirement assets quickly to qualify for the benefit. This has occurred in Australia, and as result, that country plans to increase the age when individuals can access their individual account funds from 55 to 60 between 2015 and 2025. In any of these cases, the government could incur increased costs because it ensures that individuals have at least a certain level of income. The financial risk to the government will be greater in countries that have a larger guarantee. However, the protection of individuals against poverty could also be greater in these countries.

Outside of providing a minimum pension guarantee, countries have taken additional measures to help ensure an adequate retirement income.[31] To prevent fees from eroding small account balances, some of these countries also exclude low-income workers from participation requirements in the individual account program. Another approach to help protect low-income

[31]In addition to the measures discussed in this section, other factors, such as regulations on investments, administrative and marketing costs, and fees (including those during payout), can affect the amount of retirement income individuals will receive and subsequently the adequacy of their benefits. Countries' use of these measures is discussed in the following section.

workers occurs in Mexico, where the federal government provides a flat-rate contribution on behalf of workers.[32]

It is important to consider the payout options available from individual accounts, as these can also affect income adequacy throughout retirement. For example, an annuity payout option can help to ensure that individuals will not outlive their assets in retirement.[33] However, purchasing an annuity can leave some people worse off if, for example, premiums are high or inflation erodes the purchasing power of benefits. Several countries also allow for phased withdrawals, sometimes with restrictions, helping to mitigate the risk of individuals outliving their assets and becoming dependent on the government's basic or safety net pension. Some countries offer a lump-sum payment under certain circumstances. For example, Chile and Mexico allow lump sums for persons who have account balances above a certain amount.[34] Australia allows a full lump-sum payout for all retirees age 55 and above (age 60 and above by 2025).

## Effective Regulation, Implementation, and Education Can Protect Individuals

Countries also protect individuals by regulating how the funds in their accounts can be invested. Initially, several countries offered individuals choices among a limited number of investment funds and often restricted the portion of assets that could be invested in certain products, such as publicly traded equities, private equities, and foreign securities. Later, however, the options were expanded in most countries to allow more investment diversification, but they still include some restrictions. Additionally, as investment options have expanded, some countries have incorporated other protections. For example, Chile and Mexico have incorporated investment options that take into account individuals' ages and risk tolerance. Chile requires each pension administrator to offer four

[32]The Mexican government makes a contribution to individuals' accounts of 5.5 percent of minimum wage (a contribution of about $0.24 per workday in Mexico City).

[33]The countries we reviewed require a range of annuity options, including, for example, inflation-indexed, joint and survivor, and gender-neutral. Different types of annuities will help to protect against certain risks; however, they may not be the best option for certain individuals. Certain annuities, such as those with joint and survivor or guarantee period provisions provide an opportunity for individuals to leave some benefits to their heirs. Other annuities do not provide such an opportunity.

[34]Chile allows a lump sum of the amount by which the account balance exceeds a specified level—the amount needed to pay a pension equivalent to 70 percent of pensionable salary and at least 120 percent of the minimum pension. Mexico allows a lump sum of the remaining balance if the individual account will pay a pension at least 30 percent more than the minimum guarantee.

types of funds with varying degrees of risk, including a higher risk fund and a fund invested in fixed-rate instruments. Pension administrators may offer a fifth higher risk fund, available to workers more than 10 years from the age of retirement. Mexico recently allowed pension fund managers to offer more than one investment fund and included options to help provide workers with an adequate rate of return at acceptable risk. Sweden limits individuals to selecting at most five funds from among all the qualified investment funds that choose to participate—over 650 funds as of 2004. Some experts have suggested that having such a large number of funds available may discourage active choice. About two-thirds of participants made an active investment choice in 2000. Since 2001, however, about 85 percent of new entrants have left their money in the default fund—a separate fund for those who do not wish to make a fund choice.[35] This default option can be an important safeguard. However, depending on who makes the default decisions, it may be open to some of the same issues as pension fund reserves, such as political pressures for certain investment criteria in order to meet other social objectives.

To further protect individuals, most of the countries with individual accounts have some sort of limit on the fees that fund managers can charge. Nonetheless, it is unclear how these restrictions may affect an individual's account balance and returns. Chile allows funds to charge fees on new accounts, and individual account contributions, and for phased withdrawals of funds during retirement. In addition to imposing this type of limit, Poland has a ceiling on the amount of some types of charges. Sweden has variable ceilings on charges, and the United Kingdom has a fixed ceiling charge on its stakeholder pension.[36] Sweden uses a formula to calculate the size of fees that are permitted to help ensure that fees are not too high. Additionally, it plans to spread certain fixed costs over the first 15 years of the program, helping avoid high fees in the early years. Limits on the level of fees can also affect fund managers. In the United Kingdom, for example, regulations capping fees may have discouraged some providers from offering pension funds.

[35]Sweden is undergoing a study that may include a discussion on the idea of decreasing the number of funds in which accounts are directed—from over 650 to about 20.

[36]Stakeholder pensions provide individuals with the option of contracting out of the national second tier social security system to participate in the tax-relieved defined contribution individual pension accounts.

Countries have also taken steps to lower administrative costs that contribute to the fees participants are charged. For example, regulations regarding how often individuals are permitted to move assets from one investment fund to another can also protect program participants by helping contain program costs that arise when people switch funds frequently. Many countries restrict the number of times an individual can switch. Mexico reportedly has lower administrative costs than some other Latin American countries, in part because it limits individuals to annual switching. Chile permitted people to switch fund managers three times a year, but later restricted switching to two times a year to help lower costs. Poland provides an incentive for individuals to stay with a pension fund manager for at least 2 years by requiring fund managers to charge lower fees for these contributors. Sweden does not restrict the number of times individuals can change their investments. To help keep costs low, however, Sweden aggregates individuals' transactions to realize economies of scale.[37]

Some countries' experiences highlighted weaknesses in regulations on how pension funds can market to individuals.[38] Poland's and the United Kingdom's regulations did not prevent problems in marketing and sales. Poland experienced sales problems, in part, because it had inadequate training and standards for its sales agents, which may have contributed to agents' use of questionable practices to sign up individuals. The United Kingdom had a widely-publicized "mis-selling" scandal that resulted in over a million investors opening individual accounts when they would more likely have been better off retaining their occupation-based pensions. Insurance companies were ordered to pay roughly $20 billion in compensation. In contrast, Sweden protects individuals from excessive marketing by not allowing pension funds access to information about individuals' investments. Instead, funds rely on mass advertising and provide reports and disclosures to investors through a clearinghouse.

[37]Designers of an individual account program must make critical decisions about who would assume the new administrative and recordkeeping responsibilities, how much choice or discretion individuals would have in selecting and changing their investment options, and how workers would receive their benefits. For additional information concerning options for administering individual account programs, see GAO, *Social Security Reform: Administrative Costs for Individual Accounts Depend on System Design*, GAO/HEHS-99-131 (Washington, D.C.: June 18, 1999).

[38]Marketing also contributes to the overall program costs, and a portion of these costs are often passed on to participants.

Countries' individual account experiences reveal pitfalls to be avoided during implementation. For example, Hungary, Poland, and Sweden had difficulty getting their data management systems to run properly and continue to experience a substantial lag time in recording contributions to individuals' accounts. Sweden purchased a new computer system after the program it intended to use proved insufficient for managing individual accounts, resulting in an unexpected cost of $25 million. Once a record-keeping system is in place, however, problems may persist. For example, Poland had some difficulty matching contributions with contributors because it allowed two different identification numbers to be used for reporting purposes. In such cases, workers' contributions were not being credited to their accounts. Additionally, Poland experienced problems with its computer system that resulted in a backlog. The government was required to make interest payments to funds for delays in contribution transfers. According to a report from the International Labour Organization (ILO), the government initially failed to make 95 percent of the transfers to private funds and as of 2002 was still unable to make 20 percent to 30 percent of required monthly transfers.[39]

In countries where workers have a choice of whether to participate in the individual account program, it is important that policymakers make timely decisions about other details concerning the administration and implementation of the program, so that workers can make informed choices. Hungary and Poland reportedly implemented their individual account systems without having made such decisions, including those concerning annuities. Both countries required annuity payouts, but the markets did not have the appropriate type of annuity available. For example, inflation-adjusted and gender-neutral annuities were not available in Hungary. Experts suggest that while these decisions may not have seemed important initially, the lack of information could make it difficult for workers to decide whether to participate in the individual account program and to assess their potential retirement security.

Not only is information important to help workers make initial decisions about participation in an individual account program, but it should be provided on an ongoing basis. It is also of increasing importance as

[39]International Labour Organization, *Pension Reform in Central and Eastern Europe, Vol. 1: Restructuring with Privatization: Case Studies of Hungary and Poland.* (Budapest, International Labour Office, 2002). For a general discussion of such implementation issues, see GAO, *Social Security Reform: Implementation Issues for Individual Accounts*, GAO/HEHS-99-122 (Washington, D.C., June 18, 1999).

national pension systems become more complex. Several countries require disclosure statements about the status of a pension fund.[40] The inclusion of fees charged on these disclosure statements could help individuals to make more informed decisions when choosing a fund manager. Some countries have done a better job than others of providing fund performance information. For example, Australia requires its fund providers to inform members through annual reports clearly detailing benefits, fees and charges, investment strategy, and the fund's financial position. In contrast, Hungary reportedly did not have clear rules for disclosing operating costs and returns, making it hard to compare funds' performances. Other more general information about individual account savings is also important. In the United Kingdom, individuals must decide whether they should participate in the state earnings-related pension program, their employer-sponsored pension plan, or an individual account. To help individuals make this decision, the Financial Services Agency publishes decision trees on its Web site. Decision trees in the United Kingdom ask basic questions about pension arrangements to help individuals make their own choices. Individuals may find that these are somewhat complicated, however, in part because the United Kingdom's system is complex. In Mexico, a government entity provides information to workers on the mandatory pension system and includes information about the importance of reviewing commissions and returns when making a pension fund choice.

While countries have made efforts to inform the public about the individual account program and the different options they will have available, little research on the effectiveness of these campaigns has been conducted. There has been research, however, looking at the overall financial literacy of individuals across many OECD countries. The OECD recently conducted a study on financial literacy and found that most respondents to financial literacy surveys in member countries have a very low level of knowledge concerning finances, often seeming to think that they know more about financial issues than they really do.[41] For example, about two-thirds of Australian respondents to a survey indicated that they

[40]Some countries also provide annual statements that include information about different pieces of an individual's retirement benefits, such as the PAYG and individual account benefits.

[41]OECD, Directorate for Financial and Enterprise Affairs, Committee on Financial Markets, *Financial Education Report: Overview and Analysis of Selected Non-School Financial Education Programmes: Executive Summary*, DAF/CMF(2005)6/REV2, (Paris: June 23, 2005).

understand the concept of compound interest. However, only 28 percent correctly answered a question using the concept.[42] Countries have realized the growing need for more financial literacy, and several countries provide or are planning to provide general information about pensions and savings for retirement.

## Concluding Observations

Demographic challenges and fiscal pressure have necessitated national pension reform in many countries. Though the reform efforts we examined all had the common goal of improving financial sustainability, countries adopted different approaches depending on their existing national pension systems and the prevailing economic and political conditions. That is why reforms in one country are not easily replicated in another, or if they are, may not lead to the same outcome. Countries have different emphases, such as benefit adequacy or equity; as a result, what is perceived to be successful in one place may not be viewed as a viable option somewhere else. Although some pension reforms were undertaken too recently to provide clear evidence of results, the experiences of other developed countries do suggest some lessons for U.S. deliberations on Social Security's future.

Some of these lessons are common to all types of national pension reform and are consistent with findings in previous GAO studies. Restoring long-term financial balance invariably involves reducing projected benefits, raising projected revenues, or both. Additionally, with early reform, policymakers are more likely to avoid the need for more costly and difficult changes later. Countries that undertook important national pension reform well before undergoing major demographic changes have achieved or are close to achieving, financially sustainable national pension systems. Others are likely to need more significant steps because their populations are already aging.

No matter what type of reform is undertaken, the sustainability of a pension system will depend, in large part, on the long-term health of the national economy. As the number of working people for each retiree declines, average output per worker would have to increase in order to sustain average standards of living. Reforms that encourage employment

[42] Roy Morgan Research, *ANZ Survey of Adult Financial Literacy in Australia: Final Report.* (Melbourne, Australia, May 2003). This study included a telephone survey of 3,548 adults and in-person interviews with 202, but the report did not indicate response rates.

and saving, offer incentives to postpone retirement, and promote growth are more likely to produce a pension system that delivers adequate retirement income and is financially sound for the long term.

Regardless of a country's approach, its institutions need to effectively operate and supervise the different aspects of reform. A government's capacity to implement and administer the publicly managed elements of reform and its ability to regulate and oversee the privately managed components are crucial. Good public understanding of pension issues is needed to provide reasonable assurance that people plan ahead to have adequate income in retirement and to help ensure that pension reforms have enough public support to be sustainable. In addition, education of the public becomes increasingly important as workers and retirees face more choices and the national pension system becomes more complex. This is particularly true in the case of individual account reforms, which require high levels of financial literacy and personal responsibility.

In nearly every country we studied, debate continues about alternatives for additional reform measures. It is clearly not a process that ends with one reform and often requires more than one type of reform. This may in part be true because success can only be measured over the long term, but problems may arise and need to be dealt with in the short term. The positive lessons from other countries' reforms may only truly be clear in years to come.

## Agency Comments

We provided a draft of this report to the Social Security Administration, the State Department, and the Department of the Treasury. SSA and Treasury provided technical comments on the draft; the State Department did not provide comments. We also provided copies of the draft to OECD staff and other external reviewers, who provided technical comments. In response to these technical comments, we modified the draft where appropriate.

We are sending copies of this report to the Commissioner of Social Security, the Secretary of State, and the Secretary of the Treasury. We will also make copies available to others on request. In addition, the report will be available at no charge on GAO's Web site at http://www.gao.gov/.

If you or your staff have any questions about this report, please contact me at (202) 512-7215 or bovbjergb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix III.

Barbara D. Bovbjerg, Director
Education, Workforce, and Income Security Issues

# Appendix I: Scope and Methodology

We reviewed national pension reforms that occurred since 1970 in all 30 Organisation for Economic Co-operation and Development (OECD) countries and Chile. We included Chile in our study because it was the first country to undertake national pension reform that resulted in individual accounts. On the basis of our preliminary research, we identified three types of reform—adjustments to the existing pay-as-you-go (PAYG) program, national pension reserve funds, and individual account programs—that illustrate a variety of circumstances and experiences with national pension reform across these countries.[1] While we reviewed each type of reform separately for this report, we do indicate when countries have undergone more than one of these types of reform.

We did not conduct an evaluation or audit of any country's national pension program or its reform efforts; rather, we relied on the work of officials in individual countries and international organizations with expertise in this area. We did, however, draw some lessons based on our review, as well as including the lessons that others have drawn. We attempted to report the most current status of a country's reform by using the most recently available data. Some countries may have undergone changes to their systems subsequent to the publication of the literature we reviewed, however. In many countries reforms are implemented over an extended period of time, so the results are yet to be apparent. We also contacted supreme audit institutions or reviewed their Web sites to see if they have done similar work. However, much of their work was of the audit nature and not relevant for our study.

## Methodology

To obtain information on other countries' national pension reforms, we reviewed the types of reforms undertaken in OECD countries and Chile. We selected the OECD countries in part because they are most comparable to the United States. Additionally, the OECD has relatively comparable data for its member countries. We conducted background research and interviews to identify the types of reforms, if any, the selected countries had undertaken. We primarily used information from the following sources to identify countries' reforms and characteristics of national pension systems: the *Social Security Programs Throughout the World* publications, provided through a cooperative effort by the Social

[1]This list of types of reform is not comprehensive. Some countries, Norway, for example, recently adopted legislation requiring employers to provide pensions (usually defined benefit programs) for employees.

Security Administration and the International Social Security Association; publications from the International Social Security Association and updates from its Social Security Worldwide database; and publications from OECD, World Bank, International Monetary Fund, and the European Union's Economic Policy Committee.

After identifying the countries to be reviewed and the types of reform they had undertaken, we conducted a review of relevant literature on these countries' national pension reforms, including the following sources:

- OECD Economic Surveys;
- OECD publications on national pension reform and other related issues;
- World Bank's Pension Reform Primer;
- Relevant government agency publications and Web sites from selected countries;
- Reports from U.S. and international policy groups; and
- Reports from U.S., international, and country-specific experts.

We also interviewed officials and interest group representatives in Washington, D.C.; Paris; and London. We met with pension experts and country specialists at the OECD, the World Bank, and French and British experts, officials, and interest group representatives, as well as international pension experts in the United States. We formulated the lessons learned in our report from those identified by experts and officials and based on our own analysis of countries' reforms. Generally, we aligned our lessons with GAO's criteria for evaluating national pension reform, identifying key lessons related to fiscal sustainability, adequacy and equity, and implementation and administration of reform.

We relied mainly on OECD data for information on country demographics, economics, and information related to the national pension programs. OECD collects much of its data from its member countries and validates its reports with these countries. For example, OECD recently published a description of each OECD member country's mandatory pension system, including the results of modeling that projects the net replacement rates expected from old-age pension benefits once all reforms enacted through

2002 have been fully implemented.[2] OECD has also undertaken studies of the projected level of public spending on national old-age pension programs through 2050 based on national estimates and common OECD economic assumptions.[3] In cases where national governments have completed more recent estimates, we cited those rather than the earlier OECD estimates. Also, we do not make a link between specific national pension reforms and changes in the economy or of any specific reform measure and the sustainability of the program. This is because most countries have undergone more than one type of reform at different points in time, making causes and effects difficult to determine.

To assess the reliability of the data on countries' national pension systems, we (1) interviewed officials at the OECD including those in the Statistics Directorate and the Economics Department responsible for compiling these data based on information provided by government officials in OECD member countries, and (2) performed some basic reasonableness checks of the data against other sources of information. We determined that the data are sufficiently reliable for the purpose of making broad comparisons of the United States' and other countries' pension systems. To ensure the reliability of its data, OECD also compares and investigates alternative sources of data, uses an internal peer and supervisory review process, and a process through which draft reports are reviewed and validated by member governments prior to publication. Nonetheless, OECD officials note several limitations in the data, including the fact that the data are largely self-reported by each country and are affected by differences in exchange rates, methods for analyzing national account data and tracking price inflation, as well as different methods used to predict longevity and economic growth. OECD works to develop comparable data by, for example, developing purchasing power parity factors, harmonized price indexes, and projections of old-age pension spending based on common economic assumptions. Because of, these limitations, we were unable to determine the reliability and precision of estimates for each country. We conducted our review from August 2004 through September 2005 in accordance with generally accepted government auditing standards.

[2]OECD, *Pensions at a Glance: Public Policies across OECD Countries* (Paris: 2005).

[3]See, for example, Thai Than Dang, Pablo Antolin, and Howard Oxley, *Fiscal Implications of Ageing: Projections of Age-Related Spending*, ECO/WKP(2001)31 (Paris: OECD, Sept. 19, 2001), and, OECD, *Sustainable Development in OECD Countries: Getting the Policies Right*, (Paris: 2004).

# Appendix II: Information on OECD Countries and Chile, Their Pension Systems, and Reforms

Below are tabular data concerning OECD countries and Chile. Table 3 provides background information concerning each country's demographics, economy, and political structure. Table 4 provides basic information about each country's national pension system, including information about spending on mandatory old-age pension programs, contribution rates, the extent to which mandatory pensions replace workers' earnings, and the size of voluntary supplementary private and occupational pensions. Table 5 provides examples of various adjustments to PAYG pension programs. Table 6 provides information on national pension reserve funds for countries that have established such funds. Table 7 provides information on individual account programs that countries have adopted as part of their mandatory national pension systems.

**Table 3: Background on OECD Countries and Chile**

| Country | Estimated population in millions, July 2005 | Number of people in the workforce for every person aged 65 or over | | Percentage of population aged 55-64 employed[a] | GDP per capita[b] | Percentage of elderly people receiving less than half the median income | | Government structure[c] |
|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2050 | | | Aged 66 to 75 | Aged 76 and over | |
| Australia | 20 | 3.9 | 1.6 | 50 | $30,700 | 21 | 29 | Democratic, federal-state system recognizing the British monarch as sovereign |
| Austria | 8 | 2.9 | 1.3 | 30 | 31,300 | 8 | 12 | Federal Republic |
| Belgium | 10 | 2.5 | 1.5 | 28 | 30,600 | 11 | 19 | Federal parliamentary democracy under a constitutional monarch |
| Canada | 33 | 4.2 | 1.9 | 53 | 31,500 | 4 | 5 | Confederation with parliamentary democracy |
| Chile | 16 | Not available | Not available | Not available | 10,700 | Not available | Not available | Republic |
| Czech Republic | 10 | 3.5 | 1.2 | 42 | 16,800 | 1 | 4 | Parliamentary democracy |
| Denmark | 5 | 3.4 | 2.0 | 61 | 32,200 | 4 | 9 | Constitutional monarchy |
| Finland | 5 | 3.3 | 1.5 | 50 | 29,000 | 7 | 16 | Republic |
| France | 61 | 2.7 | 1.3 | 37 | 28,700 | 10 | 11 | Republic |
| Germany | 82 | 2.6 | 1.5 | 39 | 28,700 | 10 | 11 | Federal republic |
| Greece | 11 | 2.0 | 1.2 | 42 | 21,300 | 22 | 28 | Parliamentary republic |
| Hungary | 10 | 2.6 | 1.0 | 29 | 14,900 | 6 | 5 | Parliamentary democracy |
| Iceland | 0.3 | 4.8 | 2.5 | 87[d] | 31,900 | Not available | Not available | Constitutional republic |
| Ireland | 4 | 4.3 | 1.9 | 49 | 31,900 | 31 | 43 | Republic |
| Italy | 58 | 2.2 | 0.9 | 30 | 27,700 | 15 | 16 | Republic |
| Japan | 127 | 2.5 | 1.1 | 62 | 29,400 | 20 | 24 | Constitutional monarchy with a parliamentary government |

| Country | Estimated population in millions, July 2005 | Number of people in the workforce for every person aged 65 or over | | Percentage of population aged 55-64 employed[a] | GDP per capita[b] | Percentage of elderly people receiving less than half the median income | | Government structure[c] |
|---|---|---|---|---|---|---|---|---|
| | | 2005 | 2050 | | | Aged 66 to 75 | Aged 76 and over | |
| Luxembourg | 0.5 | 3.2 | 1.7 | 28[d] | $58,900 | 4 | 9 | Constitutional monarchy |
| Mexico | 106 | 6.8 | 2.3 | 54 | 9,600 | 24 | 37 | Federal republic |
| Netherlands | 16 | 3.8 | 2.2 | 44 | 29,500 | 2 | 2 | Constitutional monarchy |
| New Zealand | 4 | 4.2 | 1.7 | 64 | 23,200 | 0.4 | 0.5 | Parliamentary democracy |
| Norway | 5 | 3.6 | 2.1 | 69 | 40,000 | 6 | 20 | Constitutional monarchy |
| Poland | 39 | 3.1 | 1.0 | 29 | 12,000 | 4 | 5 | Republic |
| Portugal | 11 | 3.1 | 1.2 | 51 | 17,900 | 25 | 35 | Parliamentary democracy |
| Slovak Republic | 5 | 4.0 | 1.0 | 25 | 14,500 | Not available | Not available | Parliamentary democracy |
| South Korea | 48 | 4.5 | 0.9 | 58 | 19,200 | Not available | Not available | Republic |
| Spain | 40 | 2.7 | 1.3 | 41 | 23,300 | 15 | 9 | Parliamentary monarchy |
| Sweden | 9 | 2.8 | 2.0 | 69 | 28,400 | 5 | 12 | Constitutional monarchy |
| Switzerland | 7 | 3.4 | 2.1 | 66 | 33,800 | 10 | 13 | Federal republic |
| Turkey | 70 | 5.1 | 1.4 | 33 | 7,400 | 17 | 15 | Republican parliamentary democracy |
| United Kingdom | 60 | 3.2 | 1.8 | 56 | 29,600 | 11 | 19 | Constitutional monarchy |
| United States | 296 | 4.1 | 2.3 | 60 | 40,100 | 20 | 30 | Constitution-based federal republic |

Source: OECD, Central Intelligence Agency (CIA), Social Security Administration.

[a]For 2003, unless otherwise noted. Amounts are rounded to the nearest whole number.

[b]For 2004, based on purchasing power parity.

[c]Government structure definitions from the United States' CIA. For definitions of the government structures see, *The World Factbook*, 2005 on the CIA's webpage, http://www.cia.gov/cia/publications/factbook/index.html, guide to country profiles section—government type.

[d]Figure for 2002.

**Table 4: Information concerning Countries' National Pension Systems**

| | | Projected funding for national pension system as a percentage of GDP | | Employee/employer contributions | |
|---|---|---|---|---|---|
| Country | Projected increase in spending on old-age pensions from 2000 to 2050 as a percentage of GDP[a] | 2000 | 2050 | Average contributions as a percentage of earnings[b] | Annual ceiling for contributions in U.S. dollars |
| Australia | 1.6 | 3.0 | 4.6 | 9.0[f] | $87,900 |
| Austria | 2.2 | 9.5 | 11.7 | 22.8 | 51,800 |
| Belgium | 3.3 | 8.8 | 12.1 | 16.4 | No ceiling |
| Canada | 5.8 | 5.1 | 10.9 | 9.9 | 29,100 |
| Chile | NA | NA | NA | 10.0 | 16,900 (as of Jan. 2003) |
| Czech Republic | 6.8 | 7.8 | 14.6 | 28.0 | No ceiling |
| Denmark | 2.7 | 6.1 | 8.8 | 1.9[g] | No ceiling[g] |
| Finland | 4.8 | 8.1 | 12.9 | 22.9 to 33.0 | No ceiling |
| France | 3.9[h] | 12.1 | 16.0[h] | 16.4 | 37,100 |
| Germany | 5.0 | 11.8 | 16.9 | 19.5 | 77,300 |
| Greece | 10.0[i] | 12.5 | 22.5 | 20.0 | 29,400[j] |
| Hungary | 1.2 | 6.0 | 7.2 | 26.5 | 3 times gross average earnings |
| Iceland | NA | NA | NA | 15.6[k] | No ceiling |
| Ireland | NA | NA | NA | 16.8[l] | No ceiling |
| Italy | -0.3 | 14.2 | 13.9 | 32.7 | 105,500[m] |
| Japan | 0.6 | 7.9 | 8.5 | 13.6 | 67,500 |
| Luxembourg | 1.9[n] | 7.4[n] | 9.3[n] | 16.0 | 105,200 |
| Mexico | NA | NA | NA | 11.3 | No ceiling |
| Netherlands | 4.8 | 5.2 | 10.0 | 25.8 | 36,900 |
| New Zealand | 5.7 | 4.8 | 10.5 | 0.0[p] | Not applicable |
| Norway | 8.0 | 4.9 | 12.9 | 21.9 | No ceiling |
| Poland | -2.5[q] | 10.8 | 8.3 | 32.5 | 18,400 |

| Projected net replacement rates as a percentage[c,d] | | | |
|---|---|---|---|
| Half of average earnings | Average earnings | Two times average earnings | Assets of voluntary supplementary pension funds as a percentage of GDP, 2002[e] |
| 77 | 52 | 36 | Not available (NA) |
| 91[c] | 93[c] | 79[c] | 4.4 |
| 83 | 63 | 43 | 5.6 |
| 89[d] | 57[d] | 31[d] | 47.6 |
| NA | NA | NA | NA |
| 88 | 58 | 35 | 3.3 |
| 96[d] | 54[d] | 36[d] | 28.5 |
| 91 | 79 | 78 | NA |
| 98 | 69 | 59 | NA |
| 62 | 72 | 67 | 3.8 |
| 100 | 100 | 100 | NA |
| 87 | 90 | 93 | 5.2 |
| 96 | 66 | 57 | 100.5 |
| 63 | 37 | 22 | NA |
| 89 | 89 | 89 | 2.0 |
| 80 | 59 | 44 | NA |
| 125 | 110 | 104 | NA |
| 50[c] | 45[c] | 44[c] | 4.9 |
| 82 | 84 | 84 | 106.0[c] |
| 77 | 40 | 22 | 15.1 |
| 86 | 65 | 50 | 4.6 |
| 70[c] | 70[c] | 70[c] | 4.4 |

| Country | Projected increase in spending on old-age pensions from 2000 to 2050 as a percentage of GDP[a] | Projected funding for national pension system as a percentage of GDP | | Employee/employer contributions | |
|---|---|---|---|---|---|
| | | 2000 | 2050 | Average contributions as a percentage of earnings[b] | Annual ceiling for contributions in U.S. dollars |
| Portugal | 4.5[r] | 8.0[r] | 12.5[r] | 23.1 | No ceiling |
| Slovak Republic | NA | NA | NA | 26.0 | No ceiling |
| South Korea | 8.0 | 2.1 | 10.1 | 9.0 | 37,100 |
| Spain | 8.0 | 9.4 | 17.4 | 28.3 | 41,000[s] |
| Sweden | 1.6[t] | 9.2 | 10.8 | 18.5 | 46,700[u] |
| Switzerland | NA | NA | NA | 16.8 to 27.8[v] | No ceiling |
| Turkey | NA | NA | NA | 20.0 | 23,100[u] |
| United Kingdom | -0.7 | 4.3 | 3.6 | 23.8 | 1% rate applies above $55,300 |
| United States | 1.8 | 4.4 | 6.2 | 12.4 | 87,000[w] |

| Projected net replacement rates as a percentage[c,d] | | | |
| --- | --- | --- | --- |
| Half of average earnings | Average earnings | Two times average earnings | Assets of voluntary supplementary pension funds as a percentage of GDP, 2002[e] |
| 116 | 80 | 86 | 13.4 |
| 58 | 60 | 66 | NA |
| 65 | 44 | 34 | 2.2 |
| 89 | 88 | 83 | 6.0[o] |
| 90 | 68 | 74 | 4.2 |
| 71[c] | 67[c] | 41[c] | 125.5 |
| 113 | 103 | 84 | NA |
| 78[d] | 48[d] | 30[d] | 73.3[o] |
| 61[d] | 51[d] | 39[d] | 57.2 |

Source: OECD and Social Security Administration.

[a]National estimate of increase needed to fund projected benefits using national models and common OECD economic and demographic assumptions as published by OECD in 2005, except as noted.

[b]Total of employer and employee contributions for old-age, survivor, and disability coverage, except as noted. In many cases these rates apply to a specified range of earnings rather than all earnings. As of 2004 for Europe, Asia, and the Pacific; as of 2003 for the Americas, except as noted.

[c]In some countries estimates for men and women differ. In these cases the values shown are for men. Specifically, the estimates for women in Austria are 86 percent, 85 percent, and 72 percent for half average earnings, average earnings, and twice average earnings, respectively. The estimates for women in Mexico are 50 percent, 30 percent, and 28 percent. The estimates for women in Poland are 62 percent, 49 percent, and 49 percent. The estimates for women in Switzerland are 72 percent, 68 percent, and 42 percent. The estimates for women in Turkey are 111 percent, 101 percent, and 82 percent, respectively.

[d]In some countries voluntary pension programs play an important role and substantially increase net replacement rates. In Canada estimated net replacement rates, including voluntary schemes, are 109 percent, 95 percent, and 69 percent for half average earnings, average earnings, and twice average earnings, respectively. In Denmark comparable estimates are 125 percent, 82 percent, and 67 percent. In the United Kingdom the estimates are 90 percent, 70 percent, and 58 percent. In the United States the estimates are 106 percent, 92 percent, and 84 percent, respectively.

[e]Aggregate supplementary private and occupational voluntary pension fund assets as a percentage of GDP in 2002 unless otherwise noted.

[f]Mandatory employer contribution to superannuation program. General government revenue funds PAYG program.

[g]Up to 2,682 kroner per year per employee for labor-market supplementary pension ATP plus 1 percent for Special Pension without a ceiling, but Special Pension contributions were suspended in 2004 through 2007.

[h]Estimate for 2040; 2050 estimate not available. In contrast, official reports suggest a 4.4 percent increase on unchanged labor market policies for the period 2000 to 2040.

[i]National projection forecasts an increase of 12.2 percentage points.

[j]No ceiling for workers first insured after January 1, 1993.

[k]Includes maternity/paternity, work injury, and unemployment benefits as well as old-age, survivor, and disability coverage.

[l]For weekly earnings above 356 euros, about $445. Percentage rate depends on level of earnings. Includes sickness, maternity, work injury, unemployment, and adoptive benefits.

[m]No ceiling for workers first insured before January 1, 1996.

[n]From an estimate published by European Union's Economic Policy Committee in 2001.

[o]As of 2001.

[p]Costs of most programs covered by general fund revenue.

[q]Assumes 2 percent growth in the revaluation factor.

[r]Estimate published by OECD in 2001, noting that this estimate is less comparable than estimates for other countries.

[s]Ceiling of $114 per day for some occupational classes.

[t]Assumes a 1.6 percent revaluation factor.

[u]Ceiling for employee contributions.

[v]Rate depends on age and gender.

[w]$90,000 as of 2005.

Table 5 provides examples of adjustments to national PAYG pension programs undertaken by OECD countries and Chile. The table primarily includes examples of reforms that increased contributions to the programs or decreased benefits. It does not provide a comprehensive list of such reforms.

**Table 5: Examples of Adjustments to PAYG Programs, 1970-2004**

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Australia | None identified | 60 to 65 for women | None identified | None identified | None identified | None identified | Means testing reintroduced in mid 1980s |
| Austria | 9.0% to 9.5% beginning in 1989 and to 10.25% for employees by 2004 | None identified | 1993: 10 to 15 years for full retirement;<br>2003: 15 to 40 years by 2028;<br>1997: 15 to 18 years for early retirement | None identified | 1993: new adjustment formula based on net wages | None identified | Reduced access to early retirement with later age requirement, reduced benefits, and incentives for delayed retirement |
| Belgium | None identified | 60 to 65 for women | 20 to 35 years for early retirement | Adoption of price index | None identified | None identified | Minimum work life for early retirement increased from 24 to 35 years; age limit for early retirement increased from 55 to 58 |
| Canada | 5.85% to 9.9% phased in beginning in 1998 | None identified | All years less 15% of low-earning years | Valorization based on ratio of the earning year's maximum pensionable earnings[c] | None identified | None identified | Means testing for basic flat benefit at high income levels |
| Chile | Increased to average of 50% of covered wages by 1974; later reduced to 33%, then 20% | 60 to 65 for men; 55 to 60 for women | None identified | None identified | None identified | None identified | None identified |

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Czech Republic | None identified | 60 to 63 for men; 57 to 63 for women, but lower depending on the number of children raised | None identified | Move to price indexation plus increases of at least one-third of real wage growth | None identified | None identified | None identified |
| Denmark | Increased by 1% of wages recently—other increases in past; gradual increase in pension contribution rates from 0 to 9% from 1993 to 2004, 5% to 9% for blue collar workers effective 2004 | None identified | None identified | None identified | None identified | None identified | Imposed actuarially fair adjustment for retiring early, decreasing cost to government and benefits to early retirees |
| Finland | Worker contributions to employment-based pensions introduced, then increased 0.7% to 2.2% of wages, and 3.7% of wages above a set level | 63 to 65 | 4 to 10, then to whole work life | None identified | From wages to 80% prices and 20% of wages, but no adjustment in 1994 | Pension benefits linked to life expectancy beginning in 2009 | Lower accrual rates for early retirees; and minimum age for early retirement raised from 58 to 60, then to 62 years; flat monthly base benefit eliminated in favor of a pension-tested benefit |
| France | New tax for pensions: 1% of all incomes | None identified | 10 to 25 years for calculation and 37.5 to 40 years required contributions | From wages to prices | From wages to prices; no adjustment in 1994 | Point system for calculating earnings-related benefits | None identified |

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Germany | Successive increases, e.g., 1991 increase of 2.5% and 1.7% in 1994; upper earnings limit indexed to wages | 60 to 65 for women by 2004 | None identified | None identified | From gross to net wages, then prices | Point system for calculating earnings-related benefits in supplementary schemes, including a demographic factor | Adopted penalties for early retirement and incentives for later retirement |
| Greece | Major increase in 1992 | 60 to 65 for women | Minimum years 13.5 to 15 years, 1990 | None identified | None identified | None identified | Benefit calculation factor 80% to 60% |
| Hungary | None identified | 60 to 62 for men; 56 to 62 for women | Increase in number of years for early and full retirement benefit | None identified | From wages to half wages and half prices | None identified | Increased penalties for early retirement by raising the minimum age and increasing the minimum number of years for early retirement |
| Iceland | None identified | None identified | None identified | None identified | None identified | None identified | Flat-rate component of the basic pension was abolished and replaced with a wholly income-related benefit |
| Ireland | Earnings cap on employer contributions eliminated (effective April 2001) | None identified | None identified | None identified | None identified | None identified | None identified |

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Italy | Increase in 1995-97 period; from 24.5% to 32.7% of gross earnings, but in part this reflected re-labeling other contributions as social security contributions | 60 to 65 for men; 55 to 60 for women through 1995, under new NDC: age 65, but early retirement as early as 57 | Increased minimum number of years for seniority pension and old-age pension | Earnings growth to moving average of nominal GDP growth over 5 years | From minimum wage to prices; partial suspension of price indexation | NDC plan adopted 1995, but to be phased in slowly | Minimum years required for benefit 15 to 20 years, but reset to 5 years for NDC |
| Japan | 17.35% to 18.3% by 2017 government share to increase from one-third to one-half of cost; also extended contributions base to include bonuses (1994) | 60 to 65 for men and 59 to 65 for women | 25 to 40 in 1986 reform | None identified | Gross wages to net wages (1994), then from wages to prices, then prices less demographic and longevity adjustments projected to be 0.6% and 0.3% per annum | In 2004 legislation introduced automatic adjustment to benefits in response to macroeconomic changes in the working age population and life expectancy | Accrual rate for earnings-related pension from 1% per year to 0.7125%; benefits to be reduced 20% by 2025; increased penalties for early retirement, incentives for later retirement |
| Luxembourg | Contribution rates are increased based on actuarial review every 7 years | None identified | None identified | Higher, not lower, revaluation factors for prior years' earnings | None identified | None identified | Increases in benefits, not decreases: supplements, higher accrual rates |
| Mexico | 20% to 26% | None identified | 10 to 25 years of contributions required for minimum benefit | None identified | None identified | None identified | None identified |

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Netherlands | Increase in 1995-1997 period and 2002 to 2004 | None identified | Shift from calculation based on final salary to one based on average salary | None identified | Indexing suspended temporarily in late 1980s | None identified | Imposed taxes on quasi-mandatory occupation-based pension early retirement benefits to increase penalties for early retirement and achieve actuarial neutrality |
| New Zealand | No employer/ employee contributions to PAYG | 62 to 65 | None identified | None identified | None identified | None identified | The link to 80% of average wages (for couple) abolished; relative value is now below 70% |
| Norway | Generally each May Parliament increases contributions by increasing the base amount used to set taxable wages (no indexation). | Retirement age lowered from 70 to 67 in 1973 | None identified | None identified | None identified | None identified | 45% to 42% of base times average pension points; maximum points per year 8 1/3 to 7 |
| Poland | None identified | None identified | None identified | None identified | Indexation suspended 2005; scheduled to be adjusted every 3 years; earlier if inflation is 5% or more | NDC reform adjusts benefits to reflect contributions, longevity, and growth in wages; replacement rate expected to drop from 73% to 24% by 2050 | None identified |

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| Portugal | None identified | 62 to 65 for women | From best 10 of last 15 years to entire work life; Increase in minimum contribution period | None identified | None identified | None identified | Accrual rate will be reduced from 2.2% to 2% |
| Slovak Republic | Increase in 1995-1997 period | 60 to 62 for men; 53 to 62 for women | Highest 5 of last 10 years to point system considering working life | None identified | None identified | Adoption of a points system with adjustments for point values | None identified |
| South Korea | Increase in 1995-1997 period and continued gradual increases through 2025 | 60 to 65 by 2033 | 15 years in 1990, then 10 years, then lifetime earnings in point system | None identified | None identified | None identified | None identified |
| Spain | Various ceilings on contributions raised to the highest level | Closed earlier plan with retirement age 60 to new entrants; new entrants retire at age 65 | 8 years of contributions to last 15 years | None identified | None identified | None identified | Reduced early retirement benefits |
| Sweden | None identified | Increase from 65 to 66; decrease to 61 with actuarial penalty | None identified | None identified | None identified | NDC reform adjusts benefits to reflect contributions, longevity, and economic performance | None identified |
| Switzerland | None identified | 62 to 65 for women | None identified | None identified | None identified | Demographic conversion factor reduced from 7.2% to 6.65% by 2016 | None identified |
| Turkey | None identified | 55 to 60 for men; 50 to 58 for women | Minimum contributions 5,000 to 7,000 days | None identified | None identified | None identified | Reduction in benefits for recipients who work |

| Country | Increase in contribution rates or coverage | Change in retirement age[a] | Change in years of earnings considered in benefit calculation | Change in indexation for calculation of initial benefit[b] | Change in indexation for benefits during retirement | Economic and demographic adjustment mechanisms | Other decrease in benefits |
|---|---|---|---|---|---|---|---|
| United Kingdom | Employees' contributions 9% to 10%; also rates increased by 1 percent for employers and employees on earnings above a threshold | 60 to 65 for women from 2010 to 2020 | From 20 best years to all working years for earnings-related pension | None identified | Basic state pension indexed to prices, 1980 | None identified | Earnings-related pension reduced from 25% of best 20 years earnings to 20% of lifetime earnings |
| United States | 10.8% to 12.4% | 65 to 67 | None identified | Wage index amended to include deferred compensation beginning in 1991 (increases benefits) | Delayed the June 1983 cost-of-living adjustment until December 1983 | None identified | Cut windfall benefits to those with benefits from employment not covered by the program |

Source: OECD, International Social Security Association, SSA, World Bank, and country publications.

[a]Changes in retirement age generally both increase contributions and decrease benefits. Workers contribute for a longer period and receive benefits for a shorter period if they work longer.

[b]This is the index used for adjusting earlier years' earnings when calculating an initial earnings-related pension benefit. In the United States, for example, earnings in a given year under age 60 are adjusted to reflect the increase in average wages from that year to the year in which the worker reaches age 60. Earnings from age 62 to age 67 are adjusted using a price index.

[c]This is indexed to growth in average earnings during the 3, then 4, then 5-year period ending at retirement.

**Table 6: National Pension Reserve Fund Reforms**

| Country | Year | Reserve as percentage of GDP | Reserve Fund management | Restrictions on class of investments | De-accumulation trigger or date |
|---|---|---|---|---|---|
| Belgium | Established 2001 | Not available (NA) | Silver Fund | 100% in government securities | None identified |
| Canada | Established 1997 | 2.3%[a] | Canadian Pension Plan Investment Board (CPPIB) | 30% limit on foreign securities beginning in 2001 | None identified |
| Denmark | Established 1964 | 25%[b] | Arbejdsmarkedets Tillaegspension (ATP)—corporation with board appointed by various employee & employer associations | The Board annually sets investment guidelines | None identified |
| Finland | Implemented 1999 | 4.5%[a] | | None Identified | None identified |
| France | Implemented 2004 | 1.2%[a] | Pensions Reserve Fund (Fonds de Reserve des Retraites, FRR) | Equities of firms headquartered outside European Economic Area limited to 25% | 2020 |
| Greece | Established 2002 | NA | NA | None Identified | None identified |
| Ireland | Established 2001 | 9.6%[c] | Autonomous National Pensions Reserve Fund Commission (NPRFC) | None of the assets can be invested in Irish government securities | 2025 |
| Japan | Established 1942, reformed 2001 | 28.2%[a] | Government Pension Investment Fund (GPIF)[d] | Minister set requirement that holdings of domestic bonds must be greater than foreign bonds; foreign equities must represent less than two-thirds of domestic equity investments; and holdings in foreign stocks must be greater than foreign bonds | None identified |
| Korea | Established 1988 | 13.0%[a] | National Pension Fund | None identified | None identified |
| Luxembourg | Late 1980s | 23.6%[a] | NA | None identified | None identified |
| Netherlands | Established 1998 | NA | AOW-spaarfonds (AOWSF) | None identified | 2020 |

| Country | Year | Reserve as percentage of GDP | Reserve Fund management | Restrictions on class of investments | De-accumulation trigger or date |
|---|---|---|---|---|---|
| New Zealand | Established 2001 | 1.6%[a] | Guardians of New Zealand Superannuation Fund | None legislated, investment policy set and reviewed annually | 2020 |
| Norway | Established 1990 | 65%[c] | Norwegian Government Petroleum Fund (NGPF)[c] | 100% in foreign securities | None identified |
| Portugal | Established 1989, reformed 2002 | 3.4%[b] | Fundo de Estabilização Financeira da Segurança Social, FEFSS | None identified | None identified |
| Spain | Established 1997 | 2.6%[c] | | None | None identified |
| Sweden | Established 1960, reformed 1999 | 23.6%[a] | Autonomous AP-fonden (APF) boards | A limit of 5 percent in unlisted securities; no one of the 4 funds can hold more than 2% of the value of equities in a single company; No more than 40% in investments with unhedged foreign currency exposure; At least 30% in highly rated fixed income securities | None identified |
| United States | Reformed 1983 | 14.1%[a] | Old-Age and Survivor's Insurance Trust Fund trustees | 100% in government securities; no foreign securities | Shortfall in program cash flows |

Source: OECD, World Bank, and annual reports for specific funds.

[a]As of 2003.

[b]As of 2000.

[c]As of December 31, 2004.

[d]Also known as the Investment Fund of Social Security Reserves or (IFSSR).

**Table 7: Individual Account Reforms**

| Country | Year implemented | Mandatory or voluntary for new entrants to workforce? | Funded with revenue redirected to accounts or new revenue? | Transition costs funding | Contribution rates |
|---|---|---|---|---|---|
| Australia | 1992 | Mandatory employer-based plan | New revenue | No transition costs | 9% (employer) |
| Chile | 1981 | Mandatory | Redirected | Built budget surpluses in advance of reform: raised taxes on consumption, sold state-owned enterprises, and borrowed from the public | 10% (employee) |
| Denmark[d] | 2002 | Mandatory | New Revenue | No transition costs | 1% gross income, but contributions suspended for 2004 through 2007 |
| Hungary | 1998 | Mandatory | Redirected revenue, parametric changes to decrease PAYG liabilities | Central budget | 8% (employee) |
| Iceland[e] | 1997 | Mandatory employer-based plan | New Revenue | No transition costs | Varies |
| Mexico | 1997 | Mandatory | Redirected | General government budget | 6.5%[f] |
| Poland | 1999 | Mandatory | Redirected | Public borrowing | 7.3% (employee) |
| Slovak Republic | 2005 | Mandatory | Redirected | Sale of nationalize companies to the private sector | 10.0% |
| Sweden | 1999 | Mandatory | Redirected | In part through reductions in PAYG benefits with adoption of NDC | 2.5% |
| Switzerland[h] | 1985 | Mandatory employer-based plan | New revenue | No transition costs | 14%-36%[i] |
| United Kingdom | 1988 | Voluntary opt-out | Redirected | General revenue | Varies by age from 2.1% to 5.25% over middle earnings range |

| Who administers the individual account program? | Who manages the individual accounts? | Minimum rates of return guarantees | Payout options | Total amount invested in the accounts at the end of 2004 as percentage of GDP | Administrative costs and charges—reduction in final capital and pension[a] |
|---|---|---|---|---|---|
| Centrelink through 401 customer service centers | Employer | No | Annuity, lump sum, phased withdrawal | 76% estimated as of September 2004 | 26% |
| Pension fund managers | Pension funds | Relative rate of return[b] | Annuity, programmed or phased withdrawal, or a combination[c] | 59% | 16% |
| The Labor-Market Supplementary Pension Institution, an independent organization headed by a bipartite board of directors | Board of Directors and Council representing the Social Partners (ATP) | No | Installments over 10 years, lump sum for small accounts | 3% | NA |
| Pension funds | Pension funds | No—abolished in 2002 | Annuity, lump sum if less than 180 months of contributions | 2% | NA |
| Independent pension funds | Pension funds | None Identified | Annuity | NA | NA |
| Social Insurance Institute | Pension funds | No | Annuity, phased withdrawal (based on life expectancy) | NA | 22% |
| Social Insurance Institute | Pension funds | Relative rate of return[g] | Annuity | 6% | 14% |
| Social Insurance Institute | Private asset managers | Relative rate of return | Annuity, phased withdrawal | NA | NA |
| Premium Pension Agency | Pension funds | No | Annuity | 7% | 15% |
| Occupational Pension Institutes | Jointly by employers and employees | 2.5% (reduced from 4%) | Annual payment equal to 7.2% of accumulated funds, with interest | 117% (2000) | NA |
| The Pensions Regulator | Variety of private pension providers | No | 25% can be a lump sum; annuity required by age 75 | NA | 19%[j] |

Source: OECD, SSA, World Bank, and country publications.

[a]Estimates include fees on investments, record-keeping services, marketing, and profits. Data from Estelle James, Gary Ferrier, James Smalhout, and Dimitri Vittas, Administrative Costs and the Organization of Individual Account Systems: A Comparative Perspective, in Robert Holzmann and Joseph Stiglitz, eds., *New Ideas About Old Age Security* (Washington, D.C.: World Bank, 2001), except as noted.

[b]The minimum rate of return is no less than 2 percentage points below the average for all pension funds of the same type.

[c]Combinations may be a phased withdrawal with deferred annuity, or immediate annuity with phased withdrawal.

[d]This row covers Denmark's Special pension savings scheme (SP) as amended in 2000. SP contributions in 1999 and 2000 were redistributed among workers to help equalize benefits. Denmark also provides a Labor Market Supplementary Plan (ATP) based on deferred annuities. The amount of contributions is based on the number of hours worked rather than earnings. The level of benefits is based in part on the rate of return in the centrally managed investment fund. Since 2002 the accrual of pension rights has been based on a guaranteed interest rate of 2 percent, but if actual returns are higher, the level of benefits can be increased.

[e]Iceland made its occupation-based pension system, with a defined benefit structure, compulsory in 1974. In 1997, Iceland passed legislation that codified the principle of a mandatory payment of at least 10 per cent of wages and salaries in order to acquire pension rights, and it also allows for the occupation-based pension program to create defined contribution individual accounts as a complement to defined benefit pensions. However, in practice, employers have not yet established these. Voluntary supplementary individual accounts are also available. The occupation-based pensions have a contribution rate of 10 percent of an employee's wages. A minimum pension of at least 56% of lifetime average salary is paid for a contribution period of 40 years (equivalent to 1.4% of average lifetime salary per contribution year) and is paid for life.

[f]The employer, employee, and government together contribute 6.5 percent, and the employee contributes an additional 5 percent contribution to an individual housing account (a scheme known as *Infonavit*) which reverts to the retirement account when it is not used.

[g]The minimum rate of return is either 50 percent of the average rate or 4 percent lower than the average for all funds during 24 consecutive months, whichever is lower.

[h]The 1985 mandatory employer-based pensions built upon the pre-existing voluntary occupational plans.

[i]Employee contributions vary based on age and gender, ranging from 7 percent to 18 percent on earnings between about $19,900 and $59,800. Employers have to at least match these contributions.

[j]Estimate from OECD, *OECD Economic Surveys 2004: Poland* (Paris: June 2004).

# Appendix III: GAO Contact and Staff Acknowledgments

## GAO Contact

Barbara D. Bovbjerg (202) 512-7215 or bovbjergb@gao.gov

## Acknowledgments

In addition to the contact named above, Alicia Puente Cackley, Assistant Director; Benjamin P. Pfeiffer; Joseph Applebaum; Thomas A. Moscovitch; Nhi Nguyen; Nyree M. Ryder; Roger Thomas; Seyda G. Wentworth; Corinna A. Nicolaou; Lise Levie; and Pat Elston made key contributions to this report.

# Glossary

| Term | Definition |
| --- | --- |
| Add-on | Individual accounts supplement Social Security benefits and would draw contributions from new revenue streams. |
| Adequacy | (See Income adequacy.) |
| Annuity | An insurance product that provides a stream of payments for a pre-established amount of time in return for a premium payment—the amount being converted into any annuity. For example, a life annuity provides payments for as long as the annuitant lives. Only insurance companies can underwrite life annuities in the United States. Other financial intermediaries, such as banks and stock brokerage firms, may sell annuities issued by insurance companies. |
| Baby boomers | Cohort of people born after World War II. This includes Americans born from 1946 through 1964; 76 million strong, they represent the longest sustained population growth in U.S. history. Other countries generally use the term “baby boomers” to describe this generation. |
| Carve-out | Individual accounts that would result in some reduction of or offset to Social Security benefits because contributions to those accounts would draw on existing Social Security revenues. |
| Consumer price index (CPI) | A measure of the change over time in the prices, inclusive of sales and excise taxes, paid by urban households for a representative market basket of consumer goods and services. The CPI is prepared by the U. S. Department of Labor and used to compute Social Security cost of living adjustment (COLA) increases. |
| Covered worker | A worker in covered employment, that is, a job through which the worker has made contributions to Social Security. |
| Deficit | The amount by which the government’s spending exceeds its revenues in a given period, usually a fiscal year. The federal deficit is the shortfall created when the federal government spends more in a fiscal year than it receives in revenues. To cover the shortfall, the government sells bonds to the public. |

**Defined benefit (DB)**

A type of retirement plan that guarantees a specified retirement payment and in which the plan's sponsor assumes the risk of providing these benefits. Defined benefit plans promise their participants a steady lifetime retirement income, generally based on years of service, age at retirement, and salary averaged over some number of years. Defined benefit plans express benefits as an annuity but may offer departing participants the opportunity to receive lump-sum distributions. Defined benefit plans are one of two basic types of employer-sponsored pension plans.

**Defined contribution (DC)**

A type of retirement plan that establishes individual accounts for employees to which the employer, participants, or both make periodic contributions. Defined contribution plan benefits are based on employer and participant contributions to and investment returns (gains and losses) on the individual accounts. Employees bear the investment risk and often control, at least in part, how their individual account assets are invested.

**Dependency ratio**

An estimate of the number of dependents per worker, generally defined as the ratio of the elderly (ages 65 and older) and/or the young (under age 15) to the population in the working ages (ages 15-64) or to the projected size of the labor force.

**Dependent**

A person who is eligible for benefits or care because of his or her relationship to an individual. Under the Social Security Act, "dependent" means the same as it does for federal income tax purposes; i.e., someone for whom the individual is entitled to take a deduction on his personal income tax return, generally an individual supported by a tax filer for over half of a calendar year.

**Early retirement age**

The age at which individuals qualify for reduced retirement benefits if they choose to collect benefits before the normal retirement age; the current early retirement age for Social Security is 62. Individuals who choose to take retirement benefits early will have their monthly benefits permanently reduced, based on the number of months they receive checks before they reach full retirement age.

**Full retirement age (FRA)**

(Also called normal or statutory retirement age.) The age at which individuals qualify for full, or unreduced, retirement benefits from Social Security and employer-sponsored pension plans. The normal retirement

age for Social Security was 65 for many years. For workers and spouses born in 1938 or later and widows/widowers born in 1940 or later, the normal retirement age increases gradually from age 65 until it reaches age 67 in the year 2022. Among OECD countries, based on full implementation of laws enacted as of 2002, the retirement age ranges from 60 (in France and Korea) to 67 (in Iceland, Norway, and the United States).

## Full funding

A pension system that is fully funded is one in which sufficient contributions have been put aside so that assets accumulated to date are equal to the value of benefits accrued to date. Defined contribution pensions and individual retirement accounts are fully funded by definition.

## General revenue transfers

Funds moved from the General Fund of the Treasury to other programs that are usually funded with earmarked revenue, sometimes to maintain the solvency of those programs. General funds, constituting about two-thirds of the budget, have no direct link between how they are raised and how they are spent. General fund receipts include income and excise taxes.

## Gross domestic product (GDP)

A commonly used measure of domestic national income. GDP measures the market value of output of final goods and services produced within a country's territory, regardless of the ownership of the factors of production involved, i.e., local or foreign, during a given time period, usually a year. Earnings from capital invested abroad (mostly interest and dividend receipts) are not counted, while earnings on capital owned by foreigners but located in the country in question are included. GDP may be expressed in terms of product—consumption, investment, government purchases of goods and services, and net exports—or it may be expressed in terms of income earned-wages, interest, and profits. It is a rough indicator of the economic earnings base from which government draws its revenues.

## Income adequacy

Helping workers maintain living standards during retirement by replacing income from work at an adequate level and to prevent destitution in old age. The U.S. Congress expected that Social Security benefits would eventually provide more than a "minimal subsistence" in retirement for full-time, full-career workers. Various measures help examine different aspects of this concept, but no single measure can provide a complete

picture. Such measures include poverty rates, replacement rates, and the proportion of the population that depends on others for income support.

## Indexation

(See Price indexation, Wage indexation.)

## Individual account

These are fully funded accounts that are administered by either employers, the government, or designated third parties and are owned by the individual. The level of retirement benefits depends largely on the amount of contributions made by, or on behalf of, an individual into the account during his or her working life, investment earnings, and the amount of fees the individual is required to pay.

## Individual equity

The relationship of benefits to contributions—for example, implicit rates of return on Social Security contributions or money's worth ratios.

## National pension reserve funds

These are set up to partially prefund PAYG national pension programs. Governments commit to make regular transfers to these investment funds from, for example, budgetary surpluses. To the extent that these contribute to national saving, they reduce the need for future borrowing or for large increases in contributions to pay scheduled benefits. Funds can be invested in a combination of government securities and domestic as well as foreign private sector securities. Because of differences in accounting practices, some countries report reserve funds as part of national budgets, while others do not include them in federal figures

## National saving

Total saving by all sectors of the economy: personal saving, business saving (corporate after-tax profits not paid as dividends), and government saving (the budget surplus or deficit—indicating dissaving—of all government entities). National saving represents all income not consumed, publicly or privately, during a given period. Net national saving is gross national saving less consumption of fixed capital (depreciation).

## Notional defined contribution (NDC) program

PAYG pension programs in which "notional" accounts track both incoming contributions and investment earnings, but these exist only on the books of the managing institution.  At retirement, the accumulated notional capital in each account is converted to a stream of pension payments using

a formula based on factors such as life expectancy at the time of retirement.

**Old-Age, Survivors, and Disability Insurance (OASDI)**

The two U.S. Social Security programs—Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI)—that provide monthly cash benefits to beneficiaries and their dependents when the beneficiaries retire, to beneficiaries' surviving dependents, and to disabled worker beneficiaries and their dependents.

**Pay-as-you-go (PAYG:)**

System of financing in which contributions that workers and/or employers make in a given year are used to fund the payments to beneficiaries in that same year, and the system's trust funds are kept to a relatively small contingency reserve.[1]

**Payroll tax**

Tax imposed on some or all of workers' earnings that can be imposed on employers, employees, or both. In the United States, payroll taxes are used to finance the Social Security and Medicare programs. Employers and employees each pay Social Security taxes equal to 6.2 percent of all employee earnings up to a cap and pay Medicare taxes of 1.45 percent, with no cap. Payroll taxes are also known as FICA (Federal Insurance Contributions Act) taxes or SECA (Self-Employment Contributions Act), if the taxpayer is self-employed. All OECD countries except New Zealand levy payroll taxes to support their pension programs, though the rates and the shares borne by employers and employees vary, as do the minimum and maximum level of earnings subject to the tax and the kinds of programs funded.

**Price indexation *(*Compare with Wage indexation.*)***

A method by which benefits are adjusted at periodic intervals by a factor derived from an index of prices; some Social Security reform proposals in the United States would price-index earnings to compute benefits, instead of using wage indexing. Over time, increases in wages have been greater and are expected to continue to be greater than increases in prices. Indexing earnings to prices instead of wages would, therefore, reduce the

[1]By comparison, the federal budgetary term "pay-as-you-go" (PAYGO) refers to a requirement that all direct spending and tax legislation for a fiscal year must be deficit-neutral in the aggregate.

average lifetime earnings used in the formula, which, in turn, would reduce benefits.

### Rate of return

Usually expressed annually, the rate of return is the gain or loss generated from an investment, expressed as a percentage of the value at the time of the initial investment.

### Replacement rate

The ratio of retirement benefits (from Social Security or employer-sponsored plans) to preretirement earnings. Analysts often compare current benefits with a recipient's previous wages to judge the adequacy of Social Security payments.

### Social insurance

Under a social insurance program, the society as a whole insures its members against various risks they all face, and members pay for that insurance at least in part through contributions to the system. Social insurance programs, including Social Security, are designed to achieve certain social goals.

### Social Security Administration (SSA)

The federal agency that administers all Social Security related programs, including the Supplemental Security Income (SSI) and the Disability Insurance (DI) programs.

### Solvency

For Social Security, a condition of financial viability in which the program can meet its full financial obligations as they come due. Specifically, the ability to pay full benefits using existing revenue sources and trust fund balances. When a program does not meet these conditions, it is said to be insolvent.

### Sustainable solvency

For Social Security, sustainable solvency means the ability to pay benefits, based on current law projections of revenue and outlays, beyond Social Security's Board of Trustees' 75-year forecast and make Social Security permanently solvent. Also defined as having a stable and growing trust fund ratio with program revenues increasing faster than outlays at the end of the 75-year period. The European Union and OECD have examined the fiscal sustainability of national pension systems based in part on projections of the change in the percentage of countries' GDP to be spent on old-age pensions from 2000 to 2050 under current law.

## Transition costs

Refers to the additional revenue required to implement substitute individual account plans. Under some individual account plans, portions of Social Security contributions would be diverted to the accounts. However, under Social Security's pay-as-you-go financing, some of those contributions would also be needed to pay for current benefits. Making account deposits while also meeting current benefit costs requires additional revenue, which we refer to as transition costs.

## Wage indexation

(Compare Price indexation.) A method by which benefits are adjusted at periodic intervals. Under its current formula, SSA uses the national average wage indexing series to index a person under age 60's lifetime earnings when computing that person's Social Security benefits. Earnings from age 62 to age 67 are adjusted using a price index.

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