# Social Security
## An Analysis of Its Problems

The social security retirement system as it exists today is fundamentally flawed. The most immediate symptom of the problem is that right now the assets of the retirement fund are too low for it to pay benefits on time. This has happened even though only five years ago the largest tax increase in U.S. history was enacted to avoid just such an eventuality. Public recognition that something is wrong has led to the formation of a special commission that will make recommendations to the President and the Congress.

Sadly, most characterizations of the social security crisis that are available are inaccurate or incomplete. Unless misconceptions about the magnitude and even the nature of the problems are corrected, it is hard to foresee how a consensus can be built to solve them. The purpose of this article is to present facts and analysis that can help correct some of these misconceptions.

The standard time profile of social security suggested by many analysts and accepted by many public officials goes like this. Currently, there is a temporary solvency problem that has been caused by uncontrollable economic factors, especially the current recession. In the medium term, no problem appears to exist, primarily because scheduled future tax increases in 1985, 1986, and 1990 will guarantee an extended period of solvency In the long run, there is a potential solvency problem caused by uncontrollable population or demographic factors.[1]

This time profile logically would carry with it an implied framework for consideration of policy alternatives. What would be required is a mix of temporary measures, such as moving forward the tax increases scheduled for 1985, 1986, and 1990 to earlier years, and of some long-range changes that need not take effect too quickly, such as gradually raising the retirement age. Under the standard profile, it might even be argued that action on long-range changes should be delayed for a few years until the outlook becomes clearer.

The analysis in this article challenges the standard profile of the social security problem and its implied policy framework. Instead, this article maintains that:

- The difficulties of the social security retirement system are more fundamental than the standard profile implies. The basic problem is that, as the program is currently structured, average retirees both now and in the future can expect to receive benefits that, by any measure, are far in excess of lifetime contributions (the payroll taxes they pay during their working years). For example, the average 65-year-old retiree in 1982 (with a nonworking spouse) recovers his

The authors would like to express their appreciaton to William Cohen for his assistance in the derivation of the figures in this article

[1] An address by Robert M Ball, "The Financial Condition of the Social Security Program", April 1982, may be considered a typical example of this characterization

Table 1

**Annual Surplus or Deficit (−) of Social Security Trust Funds**

By fiscal year, in billions of dollars

| Fiscal year | OASI* | DI† | HI‡ |
|---|---|---|---|
| 1975 | 2 1 | −0 1 | 2 0 |
| 1976 | −2 0 | −1 3 | 1 0 |
| 1977 | −1 7 | −2 2 | 0.2 |
| 1978 | −4 4 | 0 1 | 0.7 |
| 1979 | −3 2 | 1 3 | 1 6 |
| 1980 | −3 2 | 2 1 | 1.1 |
| 1981 | −0 7 | −4.3 | 3.6 |

* Old Age and Survivors Insurance Trust Fund

† Disability Insurance Trust Fund

‡ Hospital Insurance Trust Fund

Source 1982 Annual Reports of the Board of Trustees of the Federal Old Age and Survivors Insurance, Disability Insurance, and Hospital Insurance Trust Funds

Table 2

**Projected Balances (Assets) of the Social Security Trust Funds**

As of the end of the calendar year, in billions of dollars

| | "Intermediate" economic assumptions | | | |
|---|---|---|---|---|
| Year | OASI | DI | HI | Combined balance |
| 1982 | 16 8 | 1 6 | 15 9 | 34 3 |
| 1983 | − 2 6 | 8 6 | 16 5 | 22 5 |
| 1984 | −26 6 | 18.0 | 14 4 | 5 8 |
| 1985 | −50 5 | 33 9 | 10 3 | − 6 3 |
| 1986 | −78 4 | 52 8 | 6 2 | −19 4 |

| | "Pessimistic" economic assumptions | | | |
|---|---|---|---|---|
| Year | OASI | DI | HI | Combined balance |
| 1982 | 17.5 | 1 6 | 14 4 | 33 5 |
| 1983 | − 6 4 | 7 9 | 14 1 | 15 6 |
| 1984 | − 41 0 | 16 0 | 9 9 | −15 1 |
| 1985 | − 78 9 | 30 5 | 2 3 | −46 1 |
| 1986 | −126 0 | 48 3 | −7 8 | −85 5 |

Source 1982 Annual Report of the Board of Trustees of the Federal Old Age and Survivors Insurance, Disability Insurance, and Hospital Insurance Trust Funds

lifetime contributions within nine months after retiring. According to actuaries, he or his wife are expected to receive benefits for twenty-five years, so that his family's benefits exceed the taxes he paid by a vast amount. The difficulties of social security are almost entirely the result of the fact that a self-financed system cannot continue to pay out subsidies forever.

- An important consequence of this basic weakness in the current system is that the program is extremely vulnerable to uncontrollable economic and demographic factors. Thus, the risk is substantial that a medium-term surplus will never develop and that the long-term outlook is much worse than assumed.

- An appropriate framework for evaluating social security policy alternatives is first to ask whether or not a proposal addresses the fundamental problem by altering the return on contributions. Ultimately, that change is unavoidable if the system is to remain self-financed. For those proposals that do address this problem, the next question is whether they magnify or reduce the imbalance between the high return for the current generation of retirees and the far lower return for the next generation. That answer dictates who will pay for correcting the flaws in the social security retirement system as currently structured.

The National Commission on Social Security Reform is scheduled to make recommendations to the President and the Congress in the near future. It is not the purpose of this article to conjecture about which of the many social security alternatives that have been suggested by scholars over the years will be recommended by the Commission. But the article will go through several frequently proposed alternatives to illustrate the use of the analytical framework suggested for evaluating proposals.

### What does it mean to say social security is "going bankrupt"?

The general term *social security* actually relates to three different Federal Government funds which pay out benefits and for which payroll taxes are collected: Old Age and Survivors Insurance (OASI), Disability Insurance (DI), and Hospital Insurance (HI). For convenience (and to spare the reader from having to cope continuously with often confusing acronyms), old age and survivors insurance will usually be referred to as the retirement fund, even though a small

fraction of the benefit payments are made to survivors under the age of 65. This fund, which is the oldest and largest of the three, will pay out over $135 billion in benefits in calendar year 1982 That compares with about $18.5 billion for disability insurance, and $35 billion for hospital insurance These benefits are financed by payroll taxes or by running down surpluses accumulated in social security's early years when the number of workers contributing to the program was many times the number of beneficiaries.[2]

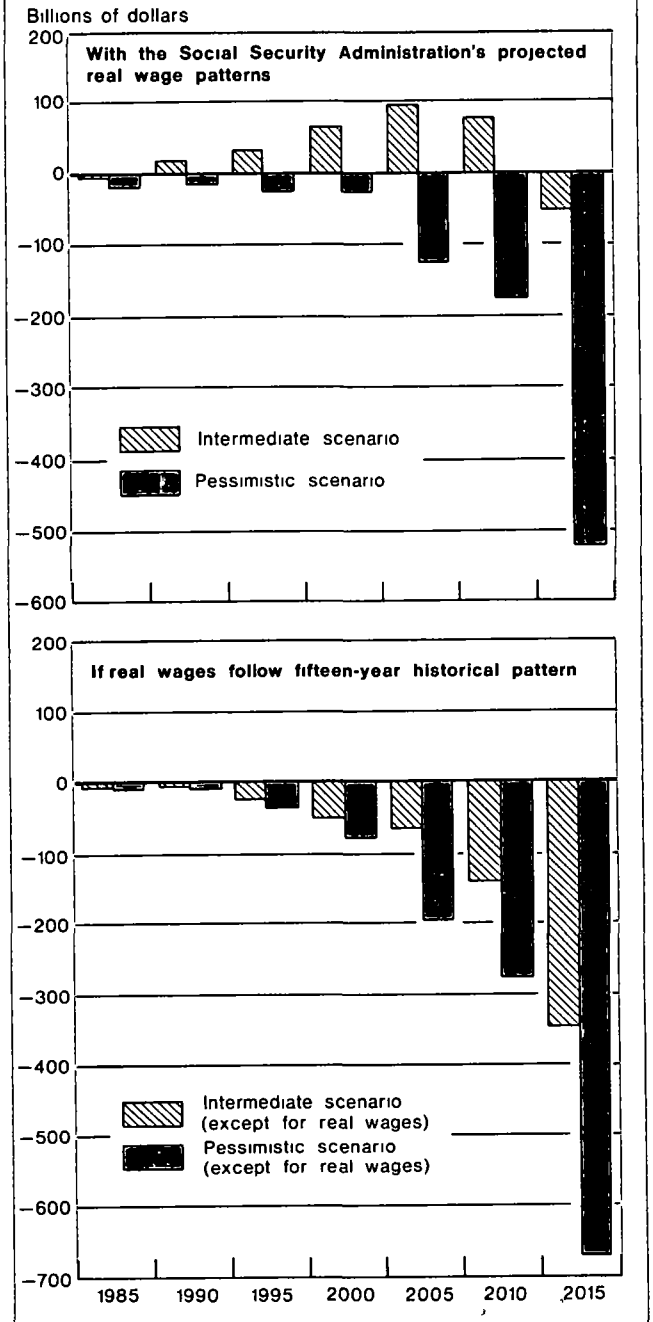
Social security is treated as a part of the Federal unified budget In that sense, benefit payments represent a major part of Federal outlays, and payroll taxes represent a major part of total revenues However, a key feature of the program since its inception has been that it is self-financed. In other words, social security payroll taxes cannot be used to pay for other general government expenses. Likewise, other Federal Government revenue sources, such as income taxes, cannot be used to pay for social security benefits[3] The option of what is called "general fund financing" has been discussed from time to time and may be considered again in the future but, to date, has always been rejected by the Congress

In theory, each trust fund's operations are separate and self-contained. So, formally, the 6.7 percent payroll tax rate levied on employers and on employees in 1982 is made up of a 4.575 percent OASI tax, a 0 825 percent DI tax, and a 1.3 percent HI tax The taxes collected for each trust fund, together with assets accumulated over the years, are supposed to pay for the benefits. The taxes paid by an individual worker have never been directly linked to his benefits in the sense that they are set aside for when he retires. Rather, most if not all of a given year's taxes have been used to pay current beneficiaries Consequently, bankruptcy has generally been defined on a cash basis—when current taxes plus accumulated assets are insufficient to pay benefits

Strictly speaking, bankruptcy for social security occurs when any one of the funds is unable to make its payments on time In practice, full separation of the trust funds has not been maintained in recent

Chart 1

**Social Security Annual Surplus and Deficit***



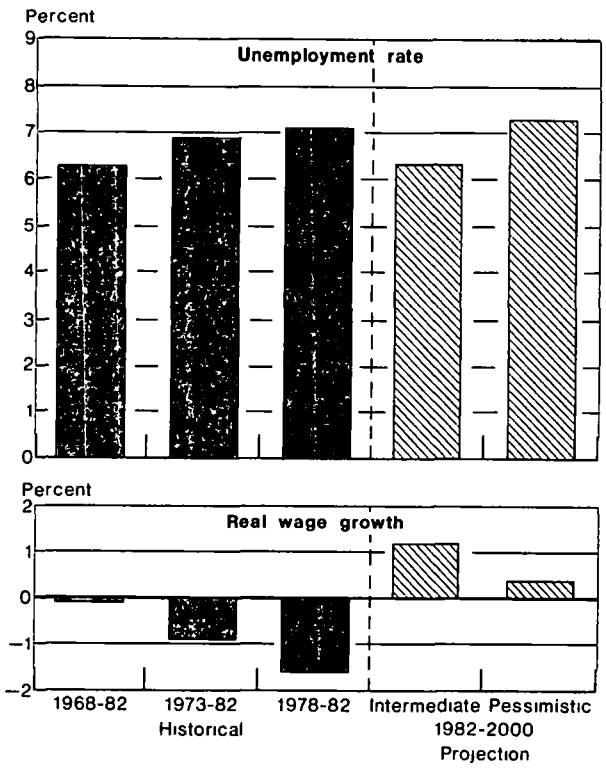

*Retirement and disability funds only Does not include Hospital Insurance Fund which will be in deficit after 1990

[2] Some characterizations of the social security system also include the Supplemental Medical Insurance program (medicare part B) It is omitted from this analysis because unlike OASI, DI, and HI it is not self-financed Instead, it is partially financed by premiums paid by retirees and mostly financed by Federal general revenues

[3] As a practical matter, the Treasury issues the benefit checks, collects the taxes, and on a day-to-day and month-to-month basis is unable to distinguish withheld income taxes from withheld payroll taxes Consequently, each month the taxes collected for each of the trust funds are only estimated A final reconciliation of the estimates and actuals is usually completed about six months after the end of the fiscal year

Chart 2

**Real Wage Growth and Unemployment Rate**




Source Social Security Administration

years As shown in Table 1, in every year between 1976 and 1981 the retirement fund ran operating deficits, the disability fund ran deficits in about half the years, and the hospital insurance fund ran surpluses The retirement fund deficits have eaten up the assets that the fund had accumulated in its early years. In 1980 and 1981, the Congress temporarily reallocated the retirement fund and disability fund tax rates, so that more taxes were channeled to the retirement fund In addition, under legislation enacted last year, OASI has begun to borrow from the accumulated surpluses of the disability and hospital insurance trust funds Without expansion or renewal of that authority by the Congress, this temporary borrowing will be insufficient to guarantee the timely payment of benefits past June 1983 Thus, interfund borrowing and tax-rate reallocation imply that an alternative (and more realistic) characterization of bankruptcy is when the combined assets of the three trust funds are exhausted

In the following sections the near- and long-term outlooks for the social security system and the size of future shortfalls will be discussed The impact that economic and demographic trends have had is also reviewed Working through the estimates is necessary to get some sense of the immediacy and magnitude of the problems on an aggregate basis Nevertheless, this numerical analysis should not obscure the basic principle involved. namely, no private insurance or retirement system can avoid bankruptcy if it continually awards benefits that are *on average* well in excess of contributions plus interest Social security is no exception

*The near and medium term*

Under the narrow definition, the retirement fund is nearly bankrupt right now Using the broader definition of bankruptcy, the entire social security system is estimated to run out of funds by late 1984 or 1985 (Table 2) Under the Social Security Administration's so-called "intermediate" economic assumptions, the disability and hospital insurance funds would not be able to offset accumulated retirement fund deficits by the end of 1985 Bankruptcy would occur one year earlier under the "pessimistic" assumptions [4]

Most discussions of social security focus on a near-term crisis and a long-term problem that peaks early in the twenty-first century By then, the large number of persons born during the period from the end of World War II through the early 1960s will reach retirement age It is generally assumed that the near-term crisis extends to 1990 At that time, an already scheduled tax-rate increase combined with rising wages of covered workers could result in annual surpluses for the retirement and disability funds that might extend until about the year 2015 (Chart 1)

Two serious shortcomings of the medium-term projections of solvency need to be emphasized The first is that they are incomplete. They omit the projections for the hospital insurance fund Under the Social Security Administration's intermediate economic assumptions, deficits of the hospital insurance fund will more than offset projected surpluses of the retirement and disability funds Substantial and growing system-wide deficits are projected throughout the 1990s and into the next century

At present, hospital insurance fund surpluses are being used to cover retirement fund deficits. The projections clearly show that this will not be possible in the future Changes in hospital insurance taxes or benefits will be needed if that program is to remain self-financed The problems of the hospital insurance

[4] 1982 Annual Report of the Board of Trustees of the Federal Old Age and Survivors Insurance and Disability Insurance Trust Funds

fund are very serious The fact is, however, that these problems, driven as they are by the rapid escalation in medical care costs for the economy as a whole, are somewhat different from the problems of the retirement fund. The remainder of this article will focus primarily on the retirement fund. But this does not signify that projected hospital insurance deficits are less important than the problems of the retirement fund. It just means that the problems of escalating medical care costs are outside the scope of this analysis.

A second shortcoming of the medium-term projections of solvency for the retirement and disability funds is that the estimates may be highly inaccurate since they are very sensitive to the economic asssumptions Differences in demographic assumptions do not have a significant effect on medium-term projections. As shown in Chart 1, if the pessimistic economic scenario came about instead of the intermediate one, it would turn the medium-term surpluses into increasingly large deficits.[5]

The most important economic assumption from the standpoint of projections of the future status of the funds is the growth rate of average real wages. That is defined here and by the Social Security Administration as the growth of nominal wages for workers covered by social security minus the growth of the consumer price index. Projections, especially the near- and medium-term ones, are extremely sensitive to the assumption about real wage growth Higher real wages translate into higher payroll taxes almost immediately On the other hand, the effect on disbursements of the retirement fund, which is transmitted by raising average wages used in the computation of initial benefits for new retirees, develops much more slowly A second important variable is the assumed unemployment rate Lower unemployment rates mean more people are contributing payroll taxes to the system

Real wage growth and unemployment rates for the Social Security Administration's intermediate and pessimistic scenarios are compared in Chart 2. Under the intermediate assumptions, the real wage growth averages 1.2 percent per year versus 0 4 percent for the pessimistic alternative For the unemployment rate, the intermediate scenario projection is 1 percentage point lower on average than the pessimistic scenario. Also shown in Chart 2 are historical averages for real wages and unemployment for the past five, ten, and fifteen years

The striking point about the comparisons in Chart 2 is that the pessimistic scenario is not altogther implausible. The historical record of real wage growth is worse than even the pessimistic scenario. Real wages in covered employment have declined, especially in recent years

For the unemployment rate, the pessimistic scenario projects a higher average level than in the past By comparison, the level projected under the intermediate scenario is about equal to the fifteen-year average but lower than the average for the more recent periods. Not depicted in the chart, but important, is the fact that the projected rate decreases significantly over time from its current high level under both the intermediate and pessimistic assumptions Yet the actual rate has risen sharply over the past fifteen years, and many economists and public officials believe that the level of unemployment that represents the lowest attainable rate may also have increased

Overall, it would appear that the historical economic record is at least as bad as, if not worse than, what is being called pessimistic by the Social Security Administration. In other words, it would be possible to construct a set of assumptions that were both plausible and much less favorable, in terms of the outlook for social security, than the so-called pessimistic scenario.

The potential risks to the medium-term social security outlook are very great if even *one* assumption turns out badly—specifically, if real wage growth turns out less favorably than assumed. To demonstrate this,

Table 3

**Long-Term Projections of Cost Rates for Retirement and Disability Programs**

By calendar year, in percent

| Year | Cost rate * Intermediate | Cost rate * Pessimistic | Scheduled tax rate |
|---|---|---|---|
| 1985 | 11 70 | 12 40 | 11 4 |
| 1990 | 11 64 | 12 85 | 12 4 |
| 1995 | 11 42 | 12 97 | 12 4 |
| 2000 | 11 03 | 12 82 | 12 4 |
| 2005 | 10 95 | 12 97 | 12 4 |
| 2010 | 11 53 | 13 92 | 12 4 |
| 2015 | 12 82 | 15 76 | 12 4 |
| 2020 | 14 44 | 18 17 | 12 4 |
| 2025 | 15 97 | 20 70 | 12 4 |
| 2030 | 16 83 | 22 63 | 12 4 |
| 2035 | 17 02 | 23 94 | 12 4 |
| 2060 | 16 81 | 28 49 | 12 4 |

* The cost rate is defined as annual outlays as a percentage of taxable payroll, or the tax rate needed to avoid a deficit

Source Social Security Administration

[5] The projected deficits are only illustrative, since under current law social security cannot borrow to finance them

Table 4

## Lifetime Employee Contributions to Old Age and Survivors Insurance

By calendar year, new retiree aged 65 in January 1982

| Year | Tax rate employee only (percent) | Maximum taxable income (dollars) | Maximum tax possible (dollars) | Average wages in covered employment (dollars) | Tax for average wage earner (dollars) |
|---|---|---|---|---|---|
| 1937 | 1 000 | 3,000 00 | 30 00 | 1,137 96 | 11 38 |
| 1938 | 1 000 | 3,000 00 | 30 00 | 1,053 24 | 10 53 |
| 1939 | 1 000 | 3,000 00 | 30 00 | 1,142 36 | 11 42 |
| 1940 | 1 000 | 3,000.00 | 30 00 | 1,195 00 | 11 95 |
| 1941 | 1 000 | 3,000 00 | 30 00 | 1,276 04 | 12 76 |
| 1942 | 1 000 | 3,000 00 | 30 00 | 1,454.28 | 14.54 |
| 1943 | 1 000 | 3,000 00 | 30 00 | 1,713 52 | 17 14 |
| 1944 | 1 000 | 3,000 00 | 30 00 | 1,936 32 | 19 36 |
| 1945 | 1 000 | 3,000 00 | 30 00 | 2,021 40 | 20 21 |
| 1946 | 1 000 | 3,000 00 | 30 00 | 1,891 76 | 18 92 |
| 1947 | 1 000 | 3,000.00 | 30.00 | 2,175.32 | 21 75 |
| 1948 | 1 000 | 3,000 00 | 30.00 | 2,361 64 | 23 62 |
| 1949 | 1.000 | 3,000.00 | 30 00 | 2,483 20 | 24 83 |
| 1950 | 1 500 | 3,000 00 | 45 00 | 2,543 96 | 38 16 |
| 1951 | 1 500 | 3,600 00 | 54 00 | 2,799 16 | 41.99 |
| 1952 | 1 500 | 3,600 00 | 54.00 | 2,973 32 | 44 60 |
| 1953 | 1 500 | 3,600 00 | 54 00 | 3,139 44 | 47 09 |
| 1954 | 2 000 | 3,600 00 | 72 00 | 3,155 64 | 63 11 |
| 1955 | 2 000 | 4,200 00 | 84 00 | 3,301 44 | 66 03 |
| 1956 | 2 000 | 4,200 00 | 84 00 | 3,532.36 | 70 65 |
| 1957 | 2.000 | 4,200 00 | 84 00 | 3,641 72 | 72 83 |
| 1958 | 2.000 | 4,200 00 | 84 00 | 3,673.80 | 73 48 |
| 1959 | 2.250 | 4,800 00 | 108 00 | 3,855 80 | 86 76 |
| 1960 | 2 750 | 4,800 00 | 132 00 | 4,007 12 | 110 20 |
| 1961 | 2 750 | 4,800 00 | 132 00 | 4,086 76 | 112 39 |
| 1962 | 2 875 | 4,800 00 | 138 00 | 4,291 40 | 123 38 |
| 1963 | 3 375 | 4,800 00 | 162 00 | 4,396 64 | 148 39 |
| 1964 | 3 375 | 4,800 00 | 162 00 | 4,576 32 | 154 45 |
| 1965 | 3.375 | 4,800 00 | 162.00 | 4,658.72 | 157 23 |
| 1966 | 3.500 | 6,600 00 | 231 00 | 4,938.36 | 172 84 |
| 1967 | 3 550 | 6,600 00 | 234 30 | 5,213 44 | 185 08 |
| 1968 | 3 325 | 7,800 00 | 259 35 | 5,571 76 | 185 26 |
| 1969 | 3 725 | 7,800.00 | 290.55 | 5,893 76 | 219 54 |
| 1970 | 3 650 | 7,800 00 | 284 70 | 6,186 24 | 225 80 |
| 1971 | 4 050 | 7,800 00 | 315.90 | 6,497 08 | 263 13 |
| 1972 | 4 050 | 9,000 00 | 364 50 | 7,133 80 | 288 92 |
| 1973 | 4 300 | 10,800.00 | 464 40 | 7,580 16 | 325 95 |
| 1974 | 4 375 | 13,200.00 | 577.50 | 8,030 76 | 351 35 |
| 1975 | 4 375 | 14,100 00 | 616 88 | 8,630 92 | 377 60 |
| 1976 | 4 375 | 15,300.00 | 669 38 | 9,226 48 | 403 66 |
| 1977 | 4.375 | 16,500 00 | 721.88 | 9,779 44 | 427 85 |
| 1978 | 4.275 | 17,700 00 | 756 67 | 10,556 03 | 451 27 |
| 1979 | 4 330 | 22,900.00 | 991 57 | 11,479 46 | 497 06 |
| 1980 | 4 520 | 25,900 00 | 1,170 68 | 12,513 46 | 565 61 |
| 1981 | 4 700 | 29,700 00 | 1,395 90 | 13,594 27 | 638 93 |
| Total | | | 11,346 16 | | 7,209.00 |

estimates were made of retirement and disability fund deficits if real wages between the years 1982 and 2000 perform as they did over the past fifteen years As shown in Chart 1, even with an average unemployment rate of 6.3 percent as in the intermediate scenario, the medium-term surpluses that were projected under that scenario would turn out to be substantial deficits.

To sum up, the record of economic performance of the past decade or so may be improved upon over the long term But social security planners cannot take it for granted that significant improvements will occur. The system, as now structured, is extremely vulnerable to unexpected economic developments, because it is a cash system with a relatively small margin of reserves and because it promises to give more to retirees in the long term than they contributed. Consequently, policy alternatives that rely on a faster growing economy to produce retirement and disability fund surpluses between 1990 and 2015 run a substantial risk—that is, the risk of encountering a new "near-term" social security crisis several years from now, regardless of what happens to the hospital insurance fund.

*The long term*

Long-term problems for the social security retirement system are not in dispute. By the year 2035, there will be only 1.5 to 2 0 contributing workers per social security retiree, compared with 3.3 workers in 1980 and 5.0 in 1960. Why this shift is so important can be readily appreciated. Under the current benefit structure, average benefits are scheduled to equal approximately 35 percent of average wages. This means that the 2.0 workers each will have to contribute 17.5 percent of their wages to support one retiree. If there are only 1.5 workers per retiree, it will take a payroll tax of 23.3 percent just to support retirement and disability benefits. (This does not include the taxes to support hospital insurance ) By comparison, the currently scheduled tax rate for the retirement and disability programs in 2035 is 12.4 percent.

The projected decline in the number of workers per retiree is the result of several factors. First, the postwar baby-boom generation, which is now in its prime working years, will begin retiring between the years 2010 and 2015. However, the baby-boom generation is itself having fewer children than previous generations, so that there will be fewer workers per retiree twenty-five years from now.

A second important factor is that retirees are living longer. The life expectancy of a person, age 65, has risen at an average rate of one year per decade since 1940. The changes that have already taken place, together with further projected improvements, will contribute to a steady increase in the number of retirees relative to the size of the work force.

Finally, part of the decline in the number of workers per social security retiree to date has to do with expansions in social security coverage during the 1950s. Each time coverage was extended in 1950, 1954, and 1956, it meant that initially many more tax-paying workers entered the system than retirees, since eligibility for benefits depends on prior experience in covered employment. It takes a couple of decades for this transitional effect of the extension of coverage to dissipate. But, eventually, individuals who were employed at the time that coverage was first extended will begin to retire.

The Social Security Administration's long-term projections are shown in Table 3. They are expressed in terms of what is called the "cost rate" for the retirement and disability programs. This rate is defined as annual outlays as a percentage of taxable payroll. Under the intermediate scenario, the period of medium-term surpluses would end in about 2015, as shown by the fact that the cost rate would be higher than the tax rate. The cost rate would continue rising to about 17 percent in the 2030s.

As with the medium-term projections, the long-term estimates under the intermediate scenario are incomplete and may be highly inaccurate. They are incomplete because they do not include the cost rate for hospital insurance. Under the intermediate scenario, the cost rate for this program alone would be about 12 percent of taxable payroll by 2035. Yet the scheduled hospital insurance tax rate is only 2.9 percent. In other words, under the intermediate scenario, the combined payroll tax rate in 2035 would have to be 29 percent (17 percent to pay for retirement and disability and 12 percent to pay for hospital insurance).

The potential dangers to the medium-term projections of the economy not performing as well as assumed under the intermediate scenario can be extended to the long-term projections An additional risk in the long-term outlook is the possibility of errors in the demographic assumptions. While these are not a major factor in the medium-term outlook, they can significantly alter the long-range projections. For example, the intermediate scenario assumes an increase in fertility rates to about 2.1 children per woman by the year 2005 from the 1980 rate of 1.84. Suppose, instead, the fertility rate were to decline to 1.7 children per woman. Then the cost-rate projections under the intermediate scenario for the 2030-60 period would be 3 percentage points higher.

Overall, projections of cost rates under the Social Security Administration's pessimistic economic and demographic scenario, shown in Table 3, provide an

example of the potential understatement of the long-term problem. These show cost rates for the retirement and disability programs rising to 24 percent of taxable payroll by 2035 and to almost 30 percent by 2060. (Including hospital insurance, costs could raise the total social security cost rate to about 45 percent of taxable payroll.) It is worth bearing in mind that even the pessimistic scenario projections may turn out to be hard to attain. The pessimistic scenario is based on an assumption of improved labor productivity and real wages over the long term. That is reasonable. But, if real wages were to follow the pattern of the past fifteen years, the financial status of the social security system would be still worse than under the pessimistic scenario.

**Fundamental problems**

The financial status of the social security trust funds outlined in the previous sections has been discussed extensively in the past few years. The true situation has often been oversimplified by ignoring the medium-term risks and understating the long-term problem. But, overall, the general public appears to realize that the system is in jeopardy. Notwithstanding this public awareness, there is considerable uncertainty or perplexity about how the financial position could be deteriorating so rapidly despite repeated payroll tax increases.[6]

The standard profile of the social security problem states that the near-term crisis is a result of the fact that benefits per person increased much more rapidly than average wages during the past few years. This phenomenon is explained in terms of distortions in the consumer price index to which benefits are indexed,

[6] This uncertainty can be seen in a survey conducted by the Gallup Organization for the U S Chamber of Commerce and reported by the Chamber in April 1982

Chart 3

**How Long Does It Take a Retiree to Recover His Lifetime Contributions?**

| Retiree | Average wage earner | Maximum wage earner |
|---|---|---|
| | **"1982" retiree** | **"1982" retiree** |
| Single retiree (or married with a working spouse) .... | 13 months | 16 months |
| Married with nonworking spouse ..... | 9 months | 11 months |
| | **"2010" retiree** | **"2010" retiree** |
| Single retiree (or married with a working spouse) .... | 23 months | 34 months |
| Married with nonworking spouse ..... | 16 months | 23 months |

Chart 4

**Other Measures of Social Security Retirement Costs and Benefits***

| Measure | 1982 retiree | 2010 retiree |
|---|---|---|
| Time to recover lifetime contribution (employer-employee taxes) ..... | 2 years 2 months | 3 years 10 months |
| Time to recover lifetime contributions (employer-employee taxes) *plus* interest ..... | 5 years 4 months | 12 years 5 months |
| Ratio of present value of benefits to contributions with interest ..... | 2.7 | 1.3 |

* Estimates computed using the Social Security Administration's intermediate economic and demographic assumptions for a 65-year-old retiree with average lifetime earnings, who is single or has a working spouse who qualifies for benefits based on her own earnings record

an unforeseen decline in labor productivity, and higher than expected rates of unemployment over the business cycle. The standard profile continues by attributing the long-term problem to demographic factors, especially the increase in the number of retirees after 2010 compared with the number of workers. These explanations, documented extensively in recent annual reports of the Social Security Administration and in analysis by outside experts,[7] are technically correct (as far as they go) but incomplete. They omit or at least fail to emphasize the fundamental element that underlies the near-term crisis, the medium-term problem, and the potential long-term collapse of the system—namely, the benefits of retirees are disproportionately large when measured against their lifetime contributions.

A new retiree in January 1982 who had reached age 65 and earned average wages during the 45-year period from 1937 through 1981 would have made lifetime contributions to the retirement fund of $7,209 (Table 4). That retiree would qualify for an initial benefit of $535 per month if he were single and $803 per month if he had a nonworking spouse who was also age 65. Consequently, within thirteen months he will recover his lifetime contributions if he is single. If he has a nonworking spouse he would have already recovered his lifetime contributions by September 1982, nine months after retirement.

The *maximum* amount that a new retiree could have paid into the OASI retirement fund over the forty-five years since the start of the system is $11,346.16. This fact may come as a surprise to those who are more personally aware of the rapid rise in social security taxes in recent years. However, as shown in Table 4, the maximum annual tax was only $30 for thirteen years. It was less than $300 as recently as 1970. And it exceeded $1,000 for the first time only in 1980. For a retiree who always paid the maximum tax, it takes slightly longer to recover lifetime contributions—sixteen months for a single retiree and eleven months for a retiree with a nonworking spouse. This is because benefit payments are slightly progressive. Examples are shown in Chart 3.

Regardless of how much in social security payroll taxes a retiree has paid, he and/or his spouse can expect to receive benefits for a long time. The life expectancy of a retiree at age 65 is approximately 16.6 more years. So, although a single retiree receives his contributions back on average within thirteen months, he is expected to receive tax-free benefits for a total of 16.6 years. For a retiree with a nonworking spouse, at least one of them is expected to receive benefits for 25.6 years.[8]

How does the payback period for current retirees compare with what future retirees can expect? As shown in Chart 3, the time it takes a new retiree to recover lifetime contributions will rise over time under the current benefit tax structure. This steady increase will occur simply because taxes paid by an individual are scheduled to increase over the next thirty years, while in the past the rates and taxable maximum were left unchanged for many years at a time. As the social security retirement system is now constituted, the payback period for the retiree in 2010 would be about twice the length of that for the current retiree. This may understate the future increase in the payback period, however, since changes will have to have been made for social security to survive until the year 2010.

The discussion that follows introduces several refinements into the calculation of the return on contributions, such as including the employer's contribution and accumulated interest and discounting the value of future benefits to their equivalent present value. However, no matter what refinements are introduced, the conclusion first suggested by simply looking at the payback period and life expectancy is inescapable —current retirees will receive in benefits many times what has been contributed, regardless of the measure.

*Refinements in the measurement of returns to retirees*

Analyzing the length of time it takes to recover lifetime contributions gives a useful first approximation of the relationship between contributions and benefits for retirees. But refinements are needed to get a more precise estimate of the financial imbalances of the current system and to see by how much the returns to future retirees are scheduled to decline.

First, there is a debate over who bears the burden of the employer's share of the payroll tax. Some economists believe that the employer tax is actually borne entirely by the employee through lower wages than would be paid otherwise. Others believe that the employer tax is by and large a fixed cost of production, although it may affect some marginal decisions about employment. If these higher costs show up as

[7] A Haeworth Robinson, *The Coming Revolution in Social Security* (Security Press, 1981), Alicia Munnel, *The Future of Social Security* (Brookings Institution, 1977), Michael J Boskin, ed , *The Crisis in Social Security* (Institute for Contemporary Studies, 1977), Robert J Myers, *Social Security* (Irwin for McCahan Foundation, 1975)

[8] For a couple, each age 65, the expected number of years until the first death is 13 2 years During that period the couple would receive 150 percent of the retired worker's basic benefit After that, the life expectancy of the survivor is 12 4 years, during which that individual would receive 100 percent of the basic benefit

higher prices or lower profits, they will only indirectly affect employees. The incidence of the employer's social security tax is an interesting public policy question. But regardless of who ultimately pays, from the standpoint of carefully measuring the financial soundness of the current benefit and tax structure, it is clear that the employer's tax should be included in total contributions.

A second refinement is needed to account for the interest earned (or the interest that could have been earned) on social security contributions. Simply accumulating lifetime contributions without including potential interest earnings understates the value of those contributions today. Thus, an alternative measure is taxes paid plus accumulated interest.

Third, even though future benefits will have been indexed to inflation, they will be worth less in today's dollars. The time value of money will erode the value of a benefit received at a later date. The usual way to account for this is to compute the present cash value of a future benefit—that is, to discount a future benefit by an assumed interest rate. For example, at an assumed interest rate of 10 percent, a benefit of $100 to be received one year from now would have a present value of approximately $90.60. (Looked at another way, if a person had $90.60 today, it would grow to $100 by one year from now assuming an interest rate of 10 percent and quarterly compounding.) A measure of the value of an individual's expected social security benefits is the sum of the present values of each of the monthly benefit payments he would receive over the remainder of his life.

Just as taxes paid plus the interest that would have been received represent the current cash value of lifetime contributions, the present discounted value of an individual's expected benefit stream represents the current value of his benefits. If the ratio of the present value of benefits to the present value of contributions (that is, lifetime contributions plus interest) for the average beneficiary is approximately 1.0, then it means that the social security system is on average providing beneficiaries with their "money's worth" on the taxes that have been paid. If the present value ratio exceeds 1.0, then benefits have a value that exceeds the value of contributions and the system is, on average, providing a subsidy. Looked at from another perspective, assuming the calculation of interest earnings and the discounting of future benefits are done with market rates, a present value ratio of 1 0 suggests that the system provides a return on contributions that is approximately equal to what could have been obtained by investing in market instruments.

The refinements in the measurement of the relationship between benefits and contributions are reflected in Chart 4. First, concentrate on the case of the average 1982 retiree. As discussed earlier, it takes a single retiree thirteen months to recover his lifetime contributions. When the matching employer contributions are included, the recovery period is doubled to two years and two months. Including accumulated interest on the employee-employer contributions makes a significant difference. It increases the time it takes to recover the contributions to five years four months. This is still less than one third the life expectancy of the 65-year-old retiree Finally, the ratio of the present value of expected benefits to accumulated contributions plus interest is 2.7. That is, on a present value basis, the system will provide benefits to the average 65-year-old single retiree that are almost three times the value of his contributions (Not shown in the chart is the fact that the present value ratio is over 5.0 for the average retiree with a nonworking spouse—a situation more common today than it will be in the future when more women will qualify for benefits based on their own earnings records.)

Turning next to the 2010 retiree, note that the returns under the current tax and benefit structure are much smaller than those for the 1982 retiree but still generous. The 2010 retiree's twelve-year five-month recovery is more than double the recovery period for the 1982 retiree. But, it is well below the life expectancy for a person of age 65. The 2010 retiree's ratio of the present value of benefits to contributions plus interest is less than half the ratio of the 1982 retiree, but greater than the 1.0 value that would be associated with equivalence between the value of benefits and contributions.

Two conclusions can be reached from the figures in Chart 4. The first is that ultimately the benefit and tax structure that lies behind the numbers will have to be changed or the self-contained characteristic of social security will have to be abandoned. A system that on average provides benefits with a value in excess of contributions cannot sustain itself indefinitely.[9] If for a period of time people receive benefits that are on average worth more than the value of contributions, at some point others will on average have to receive less than the value of their contributions (unless, of course, the system were to draw resources from other than payroll tax contributions, such as from income taxes). The second conclusion that can be drawn is

[9] Technically the "day of reckoning" could continue to be postponed if the working population were to grow faster than the retired population—something that is considered now by experts to be impossible, given the decline in birth rates in the last twenty years One explanation for the current imbalance between taxes paid and benefits received is that policymakers had previously anticipated a continuation of the high population growth of the 1950s

that there is a large imbalance built into the current benefit and tax schedule between the ratio of the value of benefits to the value of contributions for the current generation of retirees and the ratio for future generations. Current retirees obtain a much greater return. The important public policy question is whether changes to insure the survival of the system will aggravate that imbalance or improve it.

**Bad luck and long-range demographic trends**

What about the standard profile's explanation of the near- and long-term problems in terms of economic and demographic "bad luck"? How is it related to the discussion in the previous section showing that the current benefit and payroll tax structure is fundamentally unsound?

It is true that distortions in the consumer price index, to which benefits have been indexed since 1975, and declines in worker productivity have caused benefits per person to rise more rapidly in recent years than the wages on which contributions are based. If the indexed benefit increases had been equal to the increase in average wages since the beginning of automatic indexing, the OASI trust fund balances would be $20-25 billion greater in 1982. This would probably not have been enough to alleviate the need for a reallocation of the retirement and disability fund tax rates in 1980 and 1981 or enough to avoid interfund borrowing. But it probably would have been sufficient to postpone system bankruptcy until the early part of the twenty-first century, assuming the economy in the 1990s performs as well as projected in the intermediate scenario.

The wage and price history of the past few years simply accelerated the onset of financial insolvency that was made inevitable by benefit changes between 1964 and 1975. From the early years of social security, it was recognized that there would be some phase-in problems and that the benefit-cost ratios would be generous for individuals who had worked prior to 1937, when the payroll tax was first imposed.[10] This disproportionate return to retirees was supposed to have disappeared by the time the system reached maturity, sometime in the 1980s. By then, most new retirees would have spent their entire working careers paying social security taxes. However, the enactment of general benefit increases of 104 percent (25 percent in real terms) between 1965 and 1975,[11] together with what has proven to be a faulty system for indexing benefits to the true cost of living for retirees (due to an upward bias in the consumer price index), has meant that the current tax and benefit structures would prolong generous benefit-cost ratios for retirees forever, an impossible outcome for a self-financed system.

Even if the inflation-wage record of the past few years had been better, the benefits of new retirees today and in the near future would still have far exceeded their lifetime contributions. The 1977 amendments "intentionally left the program in an unsound long-range position" according to a 1981 Senate Finance Committee staff report on social security financing.[12] The amendments implicitly acknowledged that the near-term costs of these benefits would prevent the system from building up the surplus it would need to pay the retirement benefits of the post-World War II baby boom. The real benefit increases of the previous decade, combined with automatic indexing made the system vulnerable to economic bad luck. Although the tax increases in the 1977 amendments were unprecedented in size, they were not large enough to counter that vulnerability.

Just as the near-term crisis in social security has been attributed to uncontrollable economic forces, the long-range problem has been blamed on uncontrollable demographic factors. However, the retirement of the baby-boom generation, starting in about 2010, is not a valid explanation for the long-term problem. What it does is set a time limit on how long the current system can be prolonged. If the baby boom had not been followed by a "baby bust", it would have been possible to push forward somewhat the responsibility for paying for the excess of benefits over contributions.

The retirement of the baby-boom generation does not have to be a serious problem. The system could be building up large surpluses now during the prime working years of the postwar baby-boom generation to pay for their retirement benefits. If this were done, relatively small benefit reductions or tax increases would be needed to put the system on a sound finan-

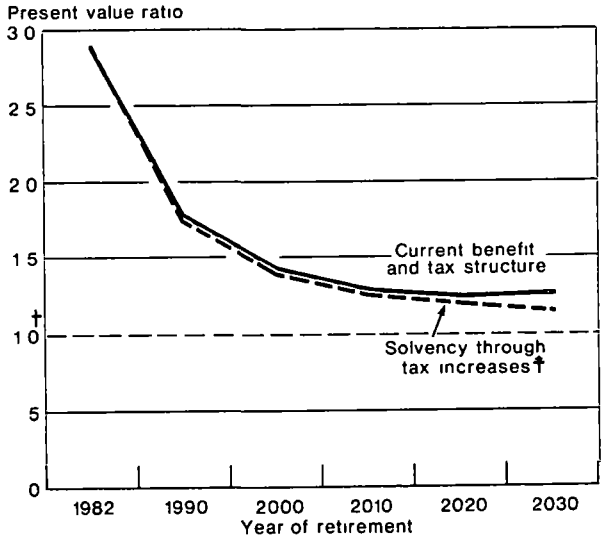
[10] The awareness dates back at least to the Social Security Act Amendments of 1939, the first of many subsequent changes to the Social Security Act and possibly to the original 1935 act. See Martha Derthick, *Policy Making for Social Security* (Brookings Institution, 1979), page 214.

[11] Another way of characterizing the benefit expansions in this period is to compare net replacement rates—that is, the initial social security benefit as a percentage of net monthly earnings after income taxes, payroll taxes, and work expenses. Prior to 1965, the net replacement rate for a single 65-year-old retiree with average wages was 44.3 percent, according to the Social Security Administration. It rose to 74.1 percent after the 1975 amendments. Changes made in the 1977 amendments have reduced net replacement rates to 54.7 percent. As things stand right now, net replacement rates are 17 percentage points higher than they were as a result of the 1950 amendments—a frequently used benchmark for measuring replacement rates.

[12] Senate Committee Staff Report on Social Security Financing, September 17, 1981.

Chart 5

**Ratio of Present Discounted Value of Benefits to Lifetime Contributions Plus Interest***




*Estimates computed using the Social Security Administration's intermediate economic and demographic assumptions for a 65-year-old retiree with average lifetime earnings, who is single or has a working spouse who qualifies for benefits on the basis of her own earnings record

†When ratio is 1 0, the present value of expected benefits equals accumulated employer-employee contributions plus interest

‡This is determined by annual solvency rates which equal the OASI cost rate if that cost rate is greater than currently scheduled future tax rates Otherwise, the solvency rate is set equal to the currently scheduled future tax rate The curve falls below 1 0 by 2050

cial basis As shown earlier, under the current benefit and tax structure, for retirees in the year 2010 and beyond, the present value of lifetime contributions approaches the present value of expected benefits.[13] Thus, the system is now designed in such a way that it could cope with the long-term demographic changes —if it were not for the fact that the contributions of current workers are being used to pay an extremely large subsidy to current retirees.

The dimensions of the problem can be expressed in another way. Chart 5 plots the present value ratio for an average 65-year-old retiree between 1982 and 2030 (Recall that this is' the ratio of the value of expected benefits to accumulated employer-employee contributions plus interest ) The present value ratio declines over time but levels off at approximately 1 25. In other words, under the current benefit and tax structure, average retirees (depending on when they retire) would get back benefits that have a value which is from 25 to 170 percent greater than contributions plus interest. But the present value ratio under the current benefit and tax structure will have to be lowered if the system is to remain self-financed

Suppose this were done by exempting current retirees from cuts and raising payroll taxes or reducing benefits for future retirees only Then, the present value ratio for all future retirees would be lower than that projected under current law (Chart 5) By 2050 the ratio will be slightly less than 1 0, by 2075, it will fall to less than 0 9

By contrast, cuts in the benefits to current retirees would improve the imbalance depicted in Chart 5. However, in the absence of drastic cuts in current benefits or a change in the self-financed character of the program, it is unlikely that there is any way of preventing the benefits for a future generation of retirees from ultimately falling below the value of the contributions made by themselves and their employer on their behalf plus interest.

**Alternative solutions to the financial problems facing the social security retirement system**

Numerous proposals for changing the social security retirement system have been made over the years Lately, most of them have been directed at the solvency problems highlighted by what has been referred to as the standard profile in the earlier discussion Table 5 shows the near-term and long-term deficits that most proposals try to alleviate *via* increasing revenues or reducing disbursements Estimates are included for the retirement fund by itself, as well as for the combined retirement and disability funds Notice that, since the disability fund is projected to remain in surplus, solvency needs are lower if permanent interfund borrowing or a reallocation of tax rates is assumed.

In the near term (1983-86), the retirement fund is projected to need revenue increases or spending cuts that will total $75-120 billion, cumulatively, over the four-year period. The lower figure is for the intermedi-

[13] This discussion is not meant to suggest that the system has to operate like a personal security account where each individual receives a market return on his contributions—no more or no less The history of the program clearly indicates that social adequacy—providing some minimum floor of income—to the elderly has been a goal of policymakers over the years This means that the returns on contributions to low-income individuals would be higher than the returns to upper income individuals. The analysis in this article is not questioning the social adequacy goal It is merely stating that, when low-income and high-income individuals are averaged, the value of benefits cannot exceed the value of contributions if the system is to remain self-financed

ate scenario. The higher estimate is for the pessimistic scenario. If disability fund surpluses are allowed to offset retirement fund needs, the required combined trust fund savings are reduced to $35-80 billion for the four years. (In theory, hospital insurance surpluses could also be used. But, this is unlikely since hospital insurance is projected to start running massive deficits of its own late in the 1980s.)

The standard profile assumes that there would be no medium-term problem. The retirement and disability funds would run surpluses between 1990 and 2010. Under the Social Security Administration's intermediate scenario, these surpluses would allow substantial balances to be accumulated. Beyond 2015, though, demographic trends will lead to increasingly large deficits which would consume the balances built up in previous years. Under this scenario, the funds would be bankrupt by 2025. (Recall that, under the pessimistic scenario, surpluses do not emerge at all during the medium term.)

Policy alternatives that are designed to rectify the long-term problem posed under the intermediate scenario generally focus on reducing deficits between 2015 and 2025. Table 5 shows how large those deficits would be and consequently by how much revenues would have to be increased and/or benefits reduced. The figures are expressed as a percentage of taxable payroll, for both the intermediate and pessimistic scenarios. By 2025, deficits would be between 3.6 percent and 8 5 percent of payroll.

*Selected proposals for change*

The set of proposals to be discussed here is by no means complete. But it does contain changes in coverage and in benefit and tax formulas which, to date, have been suggested most frequently.[14] The set includes:

- *Universal coverage of Federal Government employees under the social security system.* At present, Federal Government workers are covered by the civil service retirement system and not social security. Universal coverage would be designed to bring either current and future workers or just those in the future from the Federal Government into the social security system.[15]
- *Moving social security payroll tax increases scheduled for future years up in time.* One such proposal is to move tax increases presently scheduled for OASI and DI in 1985 and

[14] In the discussion that follows, it is assumed that each proposal, if adopted, would go into effect in 1983 unless otherwise indicated

[15] Workers in nonprofit organizations and roughly 15 0 to 20 0 percent of state and local workers are not covered under social security either A universal coverage proposal could be modified to include these workers as well There are, however, complicated legal issues surrounding the ability of the Federal Government to impose an "employer" tax on state and local governments This issue will have to be resolved before universal coverage can include state and local workers Extending mandatory coverage to workers in nonprofit organizations would have a very small effect on the savings

Table 5

**Fiscal Year Solvency Requirements for Old Age, Survivors, and Disability Insurance Using Standard Profile***

| Scenario | Near-term solvency needs (billions of dollars) 1983 | 1984 | 1985 | 1986 | 1983-86 | Long-term solvency needs† (percentage of taxable payroll) 2015 | 2025 |
|---|---|---|---|---|---|---|---|
| **Intermediate scenario‡** | | | | | | | |
| Old age, survivors, and disability trust funds | −6 0 | −12 9 | − 9 3 | − 8 0 | − 36 2 | 0 4 | 3.6 |
| Old age and survivors trust fund | −6 6 | −21 7 | −23 4 | −26 0 | − 77 7 | 0 9 | 4.1 |
| **Pessimistic scenario‡** | | | | | | | |
| Old age, survivors, and disability trust funds | −7 7 | −23 1 | −22 6 | −25 5 | − 78 9 | 3 4 | 8 3 |
| Old age and survivors trust fund | −8 0 | −30 6 | −35 3 | −42 3 | −116 2 | 3 6 | 8 5 |

* Figures are based on currently scheduled benefit levels and tax rates

† Long-term solvency needs are defined as the difference between projected costs as a percentage of taxable payroll and the tax rate scheduled for that year

‡ Does not assume near-term borrowing from hospital insurance

Source Social Security Administration

the tax increase for hospital insurance in 1986 up to 1984. A second proposal is to move the 1985 and 1986 tax increases as well as the 1990 OASI and DI tax increases up to 1984. This latter proposal would result in the single largest increase in the combined payroll tax rate since the inception of social security.

- *Altering the manner in which retirement and disability benefit COLAs are indexed to inflation.* The aim of this type of proposal is to reduce the vulnerability of the system to unexpected shocks to the consumer price index, such as occurred in 1978-81, which may not have a significant bearing on the cost of living for retirees. In addition, these proposals try to prevent the rate of increase in benefits per person in the future from being substantially higher than the rate of increase in the wages which support those benefits. To accomplish this, benefit COLAs (cost-of-living allowances) could be indexed to a fraction of the rate of change in the consumer price index instead of the full rate. Alternatively, benefit COLAs could be indexed to the change in average wages minus some constant figure like 1.5 percent. This would have the effect of locking in the real wage differential (the difference between the growth of wages and social security COLAs) that was assumed in the intermediate scenario. Furthermore, the financial status of the retirement trust fund would be less vulnerable to the pessimistic scenario economic projections.
- *Placing a temporary freeze on retirement and disability benefit COLAs.* This has been proposed to correct for the rapid increase in benefits relative to wages and salaries in the rest of the economy between 1978 and 1981. Alternatives include a one-year freeze for 1983 and a two-year freeze for 1983 and 1984.
- *Raising the retirement age.* This has been proposed to have the retirement age reflect past and projected increases in life expectancy. A number of proposals in this category have been suggested. The common element to each of them is that raising the retirement age should be phased in gradually so as not to alter drastically the retirement plans of workers now approaching age 65. Of these plans, raising the retirement age to 68 (and the age for reduced benefits to 65) by one month every four calendar months beginning in 1990 would phase in the higher retirement age in the least amount of time.[16] Hence, its peak savings level would be realized in the least amount of time relative to other proposals of this type.
- *Taxing all retirement benefits in excess of employee contributions.* In this case, benefits in excess of employee contributions would simply be included in a retiree's taxable income. (Retirement benefits received by dependents and survivors could be exempt from taxation.) This is precisely the tax treatment of all other retirement programs, ranging from private pension plans to civil service retirement.

The savings generated by each of the proposals outlined above are given in Table 6. Aside from raising the retirement age to 68, at least one version of each proposal listed has the capacity to provide substantial near-term savings. While none of them individually would yield savings sufficient to offset the projected near-term retirement fund deficits in Table 5, certain combinations of proposals would do so.

In the long term, universal coverage, indexing benefit COLAs to 60 percent of the rate of increase in the consumer price index, raising the retirement age, and taxing benefits will each continue to yield savings which will at least partially offset projected long-term deficits. A combination of proposals could yield enough savings to offset the long-term deficits but, under the solvency needs of the intermediate scenario, the combination would have to include either taxing benefits or holding COLAs to 60 percent of the increase in the index. Under the pessimistic scenario, COLA restraint would have to be included to satisfy the solvency needs.

*The financial crisis in the OASI trust fund: which proposals address the fundamental cause?*

An alternative way of examining social security proposals is to see what, if anything, each would do to the average returns to beneficiaries on their lifetime contributions. This makes it possible to determine whether a proposal is significantly affecting the fundamental problem of the social security retirement system—its excessively large return on contributions. Also, by comparing the returns over time, it will be possible to ascertain whether an alternative widens or narrows the gap between the high return on contributions for the current generation of retirees and the

[16] The age for reduced benefits is the early retirement age, currently set at 62. Workers who retire at this earlier age receive only 80 percent of their full retirement benefits for as long as they continue to receive benefits. It is also the age at which a worker's primary insurance amount (PIA) is first calculated.

Table 6

**Savings to the Old Age and Survivors Insurance Trust Fund Generated by Alternative Proposals***

| Proposal | Near-term savings (by fiscal year, in billions of dollars) 1983 | 1984 | 1985 | 1986 | Total 1983-86 | Long-term savings (as a percentage of taxable payroll) 2015 | 2025 |
|---|---|---|---|---|---|---|---|
| **Universal coverage** | | | | | | | |
| Current and future workers | 3 8 | 5 6 | 6 2 | 6 9 | 22 5 | 0 3 | 0 3 |
| Future workers | 0 2 | 0 6 | 1 2 | 1 8 | 3 8 | 0 3 | 0 3 |
| **Moving scheduled future OASI tax increases to 1984** | | | | | | | |
| 1985 | 0 0 | 4 2 | 1 5 | 0 0 | 5 7 | † | † |
| | (0 0) | (4 1) | (1 5) | (0 0) | (5 6) | (†) | (†) |
| 1985 and 1990 | 0 0 | 12 6 | 13 9 | 13 6 | 40 1 | † | † |
| | (0 0) | (12 2) | (13 7) | (13 6) | (39 5) | (†) | (†) |
| **Indexing benefit COLAs** | | | | | | | |
| 60 percent of CPI-W | 0 8 | 3 9 | 7 2 | 11 6 | 23 5 | 4 7 | 7 0 |
| | (1 0) | (5 5) | (12 5) | (21 1) | (40 1) | (6 9) | (10 9) |
| Average wages minus 1 5 percentage points | 0 2 | 0 9 | 0 9 | 0 8 | 2 8 | † | † |
| | (0 7) | (5 2) | (11 4) | (18 7) | (36 0) | (2 8) | (4 4) |
| **Freezing benefit COLAs** | | | | | | | |
| One-year freeze | 1 9 | 7 9 | 8 5 | 9 2 | 27 5 | † | † |
| | (2 4) | (10 9) | (11 5) | (12 9) | (37 7) | (†) | (†) |
| Two-year freeze | 1 9 | 9 7 | 15 6 | 16 8 | 44 0 | † | † |
| | (2 4) | (14 5) | (26 4) | (29 7) | (73 0) | (†) | (†) |
| **Raising the retirement age to 68** | 0 0 | 0 0 | 0 0 | 0 0 | 0 0 | 1 93 | 1 61 |
| **Taxation of retirement benefits in excess of employee contributions‡** | 6 6 | 9 1 | 9 8 | 10 6 | 36 1 | 2 7 | 3 4 |
| | (6 3) | (8 6) | (9 7) | (10 6) | (35 2) | (2 1) | (2 5) |

* Estimates are under the Social Security Administration's intermediate set of assumptions When the estimates under the pessimistic assumptions are different, they are shown in parenthesis

† Long-term savings are negligible

‡ The estimates for the near-term savings from taxing retirement benefits in excess of employee contributions are based on a proposal which would exempt the retirement benefits received by dependents and survivors from taxation If those benefits were also taxed, the near-term savings estimates would be roughly 18 8 percent, or up to $2 0 billion, higher There would be no appreciable effect on the long-term savings figures

much lower return for future retirees (Charts 4 and 5). This will give an indication as to which generation of retirees will pay for the disproportionately high level of benefits relative to contributions received by other generations of retirees

The estimated change in the return on contributions to retirees (measured in terms of payback periods and the ratio of the present value of lifetime benefits to taxes accumulated with interest) is presented in Chart 6 for each of the proposals. Only the two universal coverage proposals fail to alter appreciably either payback periods or present value ratios for any generation of retirees. These measures of returns are not affected because no changes would be made to the current schedule of benefits and taxes [17] The overall effect of universal coverage on the financial status of the retirement trust fund is to raise revenues now and in the future by expanding the payroll tax base, and to increase disbursements primarily in the future by increasing the number of covered beneficiaries. The near-term savings in Table 6 are due almost entirely to

[17] Technically, average future returns would be lowered very slightly by universal coverage This is because the average wages of Federal workers are higher than average wages in the rest of the economy Since the retirement benefit structure is somewhat progressive, the returns to Federal workers would be lower than for the average non-Federal wage earner What this means is that the returns to the combined Federal/non-Federal work force would be slightly lower than the returns to the non-Federal work force alone But the difference is extremely small

Chart 6

**Effects of Alternative Proposals on Current and Future Generations of Retirees***

Expressed as the change in payback periods and present value ratios under currently scheduled benefits and taxes

The effect each proposal has on the present imbalance in the return on contributions

Reduces | Increases | No major effect

| Proposal | 1982 Retiree | | 1984 Retiree | | 2010 Retiree | | 2025 Retiree | |
|---|---|---|---|---|---|---|---|---|
| | Payback period | Present value ratio | Payback period | Present value ratio | Payback period | Present value ratio | Payback period | Present value ratio |
| **Currently scheduled benefits and taxes** | **5yr., 4mo.** | **2.7** | **6yr., 7mo.** | **2.3** | **12yr., 6mo.** | **1.3** | **13yr., 1mo.** | **1.2** |
| **Changes due to** | | | | | | | | |
| Universal coverage | | | | | | | | |
| Current and future workers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future workers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Moving scheduled future OASI tax increases to 1984 | | | | | | | | |
| 1985 | 0 | 0 | 0 | 0 | † | † | † | † |
| 1985 and 1990 | 0 | 0 | 0 | 0 | +2mo | † | +2mo | † |
| Indexing benefit COLAs | | | | | | | | |
| 60 percent of CPI | +1yr, 7mo | −0 4 | +4mo | −0 4 | +9mo | −0 2 | +9mo | −0 2 |
| Average wages minus 1 5 percentage points | +4mo | −0 1 | +4mo | −0 2 | † | † | † | † |
| Freezing benefit COLAs | | | | | | | | |
| One-year freeze | +5mo | −0 1 | +6mo | −0 2 | 0 | 0 | 0 | 0 |
| Two-year freeze | +10mo | −0 3 | +10mo | −0 3 | 0 | 0 | 0 | 0 |
| Raising the retirement age to 68 | 0 | 0 | 0 | 0 | +9mo | −0 1 | +1yr, 1mo | −0 2 |
| Taxation of retirement benefit in excess of employee contributions | +1yr, 11mo | −0 7 | +1yr, 5mo | −0 6 | 4yr, 6mo | −0 4 | +4yr, 9mo | −0 3 |

* Calculations used employer-employee old age and survivors insurance tax contributions accumulated with interest Figures are for an average wage earner under the intermediate set of assumptions Under the pessimistic scenario, individual estimates would be slightly different, but the relationships between the effects on current and future retirees would be the same as under the intermediate scenario

† The effect is to increase the payback period or to reduce the present value ratio by an extremely small amount

the fact that the additional workers this proposal brings into the social security system would not be scheduled to retire for sometime. Eventually, however, they will retire In the long term, then, universal coverage leads to an increase in the number of beneficiaries who will ultimately take more out of the retirement system than they pay into it[18] This is precisely the effect expanding coverage in the 1950s had.

Moving scheduled future payroll tax increases up to 1984, freezing COLAs, and indexing benefit COLAs to the rate of change in average wages adjusted for labor productivity would each alter the return on contributions to at least one generation of retirees Despite the fact that each of them addresses the fundamental cause of the retirement fund's financial problems, none of them will be able to generate increasing amounts of savings relative to taxable payroll over the medium and long term This is because each of them has only temporary effects on the returns received by beneficiaries from the retirement trust fund.

An important difference among these three policy options is the effect they have on the imbalance between the high return from OASI contributions for the

[18] In spite of this, there are two factors which enable the universal coverage proposals to provide some slight long-term savings Both are due to the fact that the social security benefit structure is redistributive The first is that savings will be generated from eliminating dual beneficiaries—this primarily includes workers who retire from civil service jobs, work the minimum required number of quarters to qualify for coverage under social security as lifetime low-income earners, and then receive both civil service and social security retirement benefits The second is that government workers as a whole, particularly at the Federal level, tend to be higher than average wage earners (as described in the previous footnote)

current generation of retirees and the lower return for the next generation. This can be seen by comparing the change in the present value ratios and payback periods for current retirees relative to future retirees for the three proposals. Moving scheduled future tax increases to 1984 increases the payback periods of retirees in 2010 and 2025 by two months without altering payback periods for retirees in 1982 and 1984.[19] This widens the intergenerational gap between the returns to current and future retirees. Freezing benefit COLAs and, to a lesser extent, indexing benefit COLAs to adjusted wages narrows the gap.[20] Each increases the payback period for current retirees without altering them for future retirees. Also, each represents a large enough change to alter the present value ratio for current retirees relative to future retirees.[21] Consequently, although moving up tax increases, freezing COLAs, and changing the indexing formula have very similar effects in terms of the standard profile in that they generate substantial near-term savings, they are very different in terms of which generation of retirees would ultimately pay for that savings.

[19] Moving up the scheduled future tax increases has too small an effect to alter relative present value ratios appreciably

[20] Freezing benefit COLAs will lower the returns for retirees after 1984 as well This is because PIAs for a worker who retires at age 65 are calculated at age 62—the first year of eligibility for retirement benefits After that the PIA is adjusted for whatever COLAs current retirees receive This results in the initial monthly benefit a worker will receive upon retirement For example, the PIA for a worker who retires at age 65 in 1984 will be calculated in 1981 It will be adjusted for the 1981 COLA, the 1982 COLA, but not for the 1983 COLA if there is a COLA freeze in that year As a result, the worker's initial monthly benefit will be lower than it would have been without the freeze, leading to higher payback periods and lower present value ratios Under the one-year COLA freeze, then, retirees in 1983 through 1986 will have lower initial monthly benefits than they would have received without the freeze For the two-year COLA freeze, initial monthly benefits for retirees from 1983 to 1987 will be affected This assumes that there will always be a COLA in years for which no freeze is scheduled

[21] Dividing the present value ratio for a 1982 retiree by the present value ratio for a 2010 retiree under currently scheduled benefits and taxes yields a quotient of 2 1 Under a one-year COLA freeze or the wage indexation proposal this quotient would fall to 2 0, and under a two-year freeze it would equal 1 8 The results are similar for 1984 retirees relative to retirees in the future

Raising the retirement age to 68 results in no near-term savings and in gradually increasing medium-term savings. In the long term, savings as a percentage of taxable payroll peak in 2015, decline for the next fifteen years, and then increase through 2040 where they stabilize at approximately 1.7 percent. Savings are generated by increasing a worker's lifetime contributions to the trust fund and by reducing total benefits received after retirement. Under this proposal, in the year 2002 and beyond, a worker will have paid OASI taxes for three more years and, given life expectancies at age 68, can expect to receive benefits for three fewer years. As a result, the intergenerational imbalance in returns from OASI contributions is aggravated.

Indexing benefit COLAs to 60 percent of the rate of increase in the consumer price index and taxing retirement benefits in excess of an employee's share of OASI contributions differ from the other proposals discussed thus far in two respects First, each generates savings which, as a percentage of taxable payroll, continue to increase from the near term through the long term. Second, these savings are generated at the expense of all generations of retirees. Each generation's payback periods are higher and their present value ratios are lower. However, neither proposal significantly alters the present value ratio of the current generation of retirees relative to that for future generations. In this sense, current and future retirees each pay for restoring near-term and long-term solvency to the retirement trust fund.

While this is by no means an exhaustive list of options for resolving social security problems, it demonstrates that fixing the system will require reducing the excess of returns over contributions to one or more groups of retirees (assuming the program is to remain self-financed). Identifying which groups would bear this burden, measured in terms of a lower return on contributions, is the analytical task that this article has attempted to facilitate Choosing among options, once their implications have been identified, represents the difficult but important challenge that faces public policymakers.

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