LONG-RANGE COSTS OF SOCIAL INSURANCE

Moderator: JOHN C. WILKIN
Panelists: AILEY BAILIN
               STEPHEN CHARLES GOSS
               THOMAS A. ROWLEY
Recorder: SAMUEL S. STANLEY

o   Projected costs of social insurance programs in the United States and
     Canada
o   Experience of the British National Health Service on controlling costs versus
     providing quality service
o   Economic consequences of the projected high costs of social insurance
o   Economic consequences of the projected build-up and spend-down of the Old
     Age, Survivors, Disability Insurance (OASDI) Trust Funds
o   Possible solutions to the financing of these programs

MR. JOHN C. WILKIN: We are all familiar with the claim that Social Security
programs in the United States and Canada are expected to increase in cost
significantly as the baby boom generation begins to retire, but to quantify all
those costs requires the gathering of long-range projections of all the various
programs.   We took it upon ourselves to put together these costs, to look at how
these costs might be met, and the economic consequences of meeting these costs.
We will begin with the discussion of the Canadian programs.   Mr. Ailey Bailin
will lead off with comments on how future demographic change will impact social
expenditures.

MR. AILEY BAILIN: If any of you are readers of the *IBIS Review*, you may
have noticed in the February edition, a table showing the impact of demographic
change on social expenditures.   The following is an excerpt from that table
which was originally prepared by the Organization for Economic Co-operation and
Development (OECD).   The numbers express total social expenditure in real
terms as a percentage of social expenditure in 1980.   What is perhaps most

SOCIAL EXPENDITURES

(1980 = 100)

	2000	2020	2040
CANADA	124	162	187
FRANCE	109	124	128
ITALY	103	111	107
JAPAN	125	141	140
UNITED KINGDOM	97	105	110
UNITED STATES	112	147	165
WEST GERMANY	104	103	97

SOURCE OECD/*IBIS REVIEW*

significant is that there are some large increases projected by the year 2040.
What is downright frightening is that the country with the highest increase is
Canada with the United States in a distant second place.

As actuaries, we are trained to look beyond the initial scariness of numbers and
determine their real import. We were once scared by government deficits of a
billion dollars. Now it takes a trillion to scare us. Certainly as actuaries we
are trained to be skeptical or at least critical of numbers loosely bandied about.

Last year the Society of Actuaries Committee on Social Insurance undertook the
task to substitute some facts for impressions and conduct its own long range
projections of various social security costs. The work done on Canadian social
security owes a lot to Bernard Dussault and his staff at the Canada Pension Plan
Division of the Office of the Superintendent of Financial Institutions. Bernard is
a member of our committee and so he was able to use their model of the Canadian
population and their computer programs that are used in the actuarial valuation
of the Canada Pension Plan.

We decided to include in our study the following social insurance programs:

1. Canada and Quebec Pension Plan (CPP) -- For any of you who are not
   familiar with this it is similar to OASDI in the U.S.

2. Old Age Security (OAS) -- This is flat dollar benefit currently at $310.66
   payable to all Canadians over the age of 65.

3. Guaranteed Income Supplement (GIS) -- Additional benefit which is income
   tested and provides a guaranteed annual income to the elderly; receipt of
   OAS is necessary to qualify.

4. Spouse's Allowance -- Like the GIS except it is available to spouses of the
   elderly who are not yet old enough to qualify for OAS.

5. Health Insurance -- These are programs separately sponsored by the indi-
   vidual provinces but subject to federal-provincial agreements and
   costsharing.

We had some soul searching to do about including Health Insurance. First of
all, results wouldn't be strictly comparable with those for the U.S. because the
Canadian program is universal and covers all Canadians regardless of age or
ability to pay. Secondly, we had more difficulty in obtaining enough detailed
breakdowns of current experience and in deciding on assumptions for our long-
range projections. However, we felt that the importance of the program in terms
of sheer weight in gobbling up economic resources, meant that we had to include
it.

There were programs that we left out of our study which we would have liked to
include. These were:

   -- family allowances
   -- unemployment insurance
   -- worker's compensation
   -- social assistance.

They were left out due to the constraints of time and resources. They were
also more difficult to compare with the U.S. situation. However, if any of you

plan to refer to any European figures for comparison, you should be aware that such programs are often included in any social security definition. Our committee expressed the hope that these areas could be covered in future studies carried out by the committee.

METHODOLOGY
As you are probably all aware, the province of Quebec has its own separate social insurance program which is substantially the same as the Canada Pension Plan for the rest of the country. It was necessary as a start for us to expand our demographic data base to include Quebec as well. The minor differences that this makes have been disregarded. Henceforth I will refer to the CPP only but I will mean that Quebec residents are included.

We derived costs as a percentage of employment earnings. However, you should bear in mind that those will not correspond directly to hypothetical CPP pay-as-you-go rates, since contributory earnings for CPP purposes are only earnings between the basic exemption and the wage base. The wage base is quite low when compared to total employment earnings since it is essentially the average industrial wage. The basic exemption is 10% of the wage base.

Both the GIS and the spouses allowance are income - tested programs. This made it necessary to make some assumptions about the utilization rates in the future. We had some interesting discussions on future poverty levels and potential government response to them, as well as the retirement income we as a society can hope to derive from pension and retirement savings plans. In the end we decided to use utilization rates that had manifested themselves only after the maturity of the CPP in the mid-1970s. We took the actual pattern from 1979 through 1986 and extrapolated that to the year 2010 after which we kept them constant.

For health care costs we were disappointed to find that Saskatchewan was the only province that kept statistics for all health services on an age-specific basis. Therefore we assumed their relative levels would hold true for the entire country. From the information available to us, we have no reason to believe that the use of Saskatchewan's cost figures will bias the results toward the high cost end, although there is the possibility that there is some bias toward the low cost end. We had some difficulty with a paucity of age-specific data at the very old ages (above age 75). To deal with this problem, we modified our figures in line with data from Quebec for physician's fees.

ASSUMPTIONS
In choosing a set of actuarial assumptions for future experience, it was our intent to pick reasonable assumptions. These were for the most part identical to the assumptions used to value the CPP and we also attempted to be as consistent as possible with the assumptions adopted by the U.S. portion of our committee for similar projections being done for U.S. Social Security.

For mortality we used the most recent population experience as seen in the 1980-82 Canadian Life Tables with a projection for future mortality improvements through to the year 2050.

For net immigration we adopted a level of .302% of the Canadian population. This was based on actual recent experience.

Employment earnings were assumed to increase at 5% per annum.

273

PANEL DISCUSSION

There were two assumptions where we decided to have alternatives in addition to our base assumption: these were fertility and price increases.

Current Canadian fertility rates are running just under 1.7 per female in the age range. You will recognize this as being less than the replacement level. In order to allow for the possibility that the population will eventually approach the replacement level, we chose as our most reasonable assumption that the fertility rate would gradually rise and reach 2.0 in the year 2010; thereafter it would remain constant. However, we also looked at what would happen if fertility remained at its current low point.

For price increases we had several reasons for using alternatives. Four percent was our base assumption. But remember that the retirement income benefits are all indexed to the Consumer Pricing Index. If the rate of increase in OAS and GIS does not keep pace with the rise in earnings (which is 5%), then people who retire in the future will receive lower income replacement levels compared to today's retired. Based on past ad hoc increases in both OAS and GIS, we felt that there was sufficient likelihood of similar action in the future to warrant a projection in which the Consumer Price Index was equal to the earnings increase rate.

As far as health care costs go, we felt that there was a great deal of uncertainty as to what would happen in terms of the increase in costs. One reasonable assumption was that health care costs would increase at the same rate as other prices. A second assumption was to assume that health care costs would increase faster than other prices. This was in part based on past experience and in part on the assumption that there would continue to be improvements in the quality of care with attendant cost increases. We chose to make two additional projections. One was based on a rate of health care price inflation equal to the rise in earnings, and the other was based on a rate 1% higher than earnings.
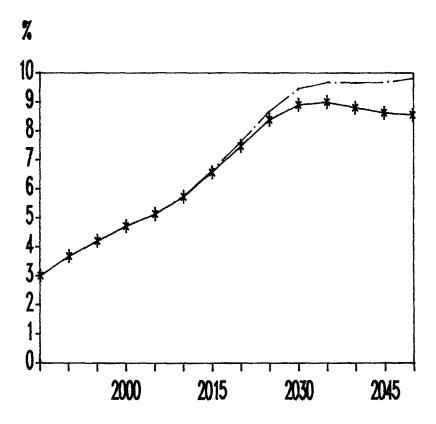
RESULTS
So now lets look at the results. Please remember that in each of these graphs the costs are shown as a percentage of total employment earnings.

Graph 1 shows the CPP costs. We start out at a level of 3.01% in 1987. The dashed line shows what happens under our fertility assumption of 1.7. The costs gradually rise and reach their maximum level of 9.82% in the year 2050, the last year of our projection. The asterisk line shows the results if fertility rises to 2.0. The cost rate remains the same until the extra births reach the work force and then it rises more slowly. The rate reaches a peak of 9.0% in 2035 and drops down to 8.56% by the year 2050.
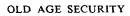
Graph 2 shows the comparable results for OAS. Again the dashed line shows fertility of 1.7 and the asterisk line, fertility of 2.0. The maximum of the dashed line is 4.83% in 2030 when the bulk of the baby boom will be drawing benefits. The asterisk line peaks at 4.57% in the same year. This time we have added a dotted line to show what happens when indexing is assumed to be the same as the earnings increase rate. For the dotted line, we used our 2.0 fertility rate. Guaranteed income supplement and spouses allowance (Graph 3) show similar patterns. Here I have combined those two programs. Once again the dashed line is for fertility of 1.7, the asterisk line is for fertility of 2.0, and dotted line is for fertility of 2.0 with indexing at 5%. The initial drop in
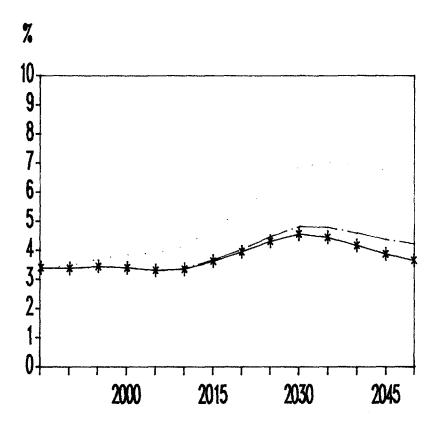
GRAPH 1
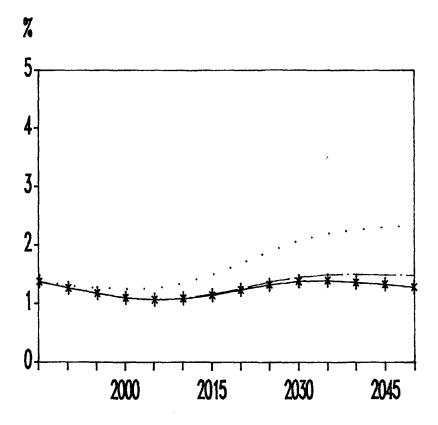
CANADA PENSION PLAN

GRAPH 2

OLD AGE SECURITY

%

GRAPH 3

GUARANTEED INCOME SUPPLEMENT
AND SPOUSES ALLOWANCE COMBINED

the rate is due to our projection of declining utilization rates through to the year 2010.

That brings us to the last of our measured programs: health care (Graph 4). Lines have the same meanings as in the previous three graphs. But this time we have added a solid line also. The solid line represents fertility of 2.0 and indexing at a rate 1% higher than the increase in earnings (6%). As you can see by comparing the dashed and asterisk lines, the higher fertility rate means higher health care costs in the early years because the population is larger and the additional population is not yet in the labor force. In the long run the costs will be lower because of the extra population base. Interestingly enough, the cost by the year 2050 is marginally lower as a percentage of employment earnings than it is today in both the dashed and asterisk lines because the earnings base is indexed at 5% and the costs at 4%. However, when we index the costs at the same rate as earnings, which is our dotted line, the costs in the year 2050 are 50% higher than today reaching a level of 11.34% of earnings compared to 7.52%. If on the other hand, health costs escalate at 6%, 1% higher than the rate of earnings, our solid line shows that the costs rise very rapidly and in our projection reach a level of 20.80% in the year 2050.

Finally we put together the various components and look at the whole picture (Graph 5). Total costs in 1987 are 15.32% of employment earnings. With continued low fertility, the dashed line indicates steady increases up to 23.61% in the year 2035 and tapering off slightly to 22.34% by the year 2050. At its maximum the cost is 54% more of a burden than today. With the higher fertility assumption of the asterisk line, the maximum hits only 22.15% before declining to 19.73% in 2050, still 33% above today's rate. With higher inflation assumptions we get a peak of 29.76% on our dotted line and 38.37% on our solid line. This highest point is 150% higher than today's cost and 94% higher than the cost in 2050 under our reasonable but lowest cost projection.
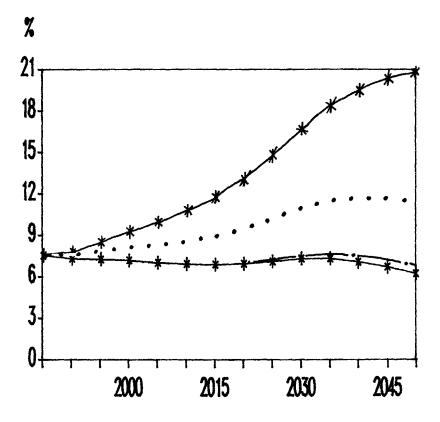
POSSIBLE SOLUTIONS
So now we finally arrive at the point where we can do a little creative thinking. I hope that each of you will give it some thought on your own and share these with the rest of us.

The first thing that I would do is to follow a step already taken in the United States. That is to gradually increase the normal retirement age from 65. Old age security was first introduced in Canada in 1927. At the time, it was income tested and required age 70 to qualify. At that time the life expectancy at age 70 was 11 years for males and 12 years for females. Now OAS is available from age 65 and CPP normal retirement age is 65. The life expectancy at age 65 is currently 15 for males and 19 for females. Given that history, perhaps it is not unreasonable to expect that the population will accept a delaying of the normal retirement age for social security qualification. Indeed there are other persuasive arguments. For one thing, the average number of years of schooling has been lengthening over the decades and this means the number of productive working years has been shrinking. Also the projections for the work force in the 1990s is to decline significantly as a percentage of the total population. If this does in fact occur, there will be increased pressure to retire later. All in all there seem to be ample reasons to increase the normal retirement age. On the other hand, retirement is seen more and more as something that ought to be flexible. Therefore the availability of early retirement cannot be taken away, but perhaps the age at which early retirement reductions start could be
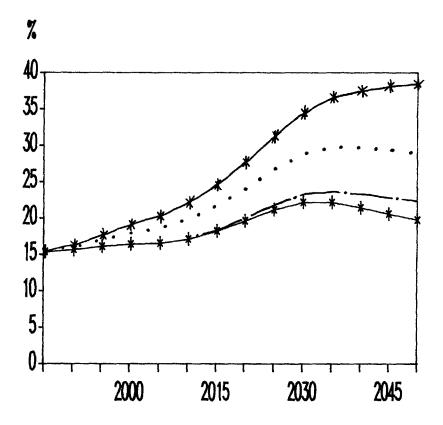
GRAPH 4

HEALTH CARE

GRAPH 5

ALL PROGRAMS COMBINED

increased. I suspect that such a step would be roundly denounced from many quarters, with the result that it would be politically undoable.

Second, seeing the importance of the indexing assumption on health benefits, it becomes extremely important to control the rate at which health expenditures escalate. Again I suspect that it is unacceptable to reduce the quality of care or to deny the population access to new procedures, medicines, and technology. Still if we are vigilant in our overseeing of health expenses and we know the consequences of letting them get out of control, perhaps we can prevent some of the more disastrous outcomes projected in our study. Based on our figures it appears that we can tolerate a rise faster than the general rate of inflation, but not as fast as the rate at which earnings rise. Assuming that the salaries of health care workers will rise at the same rate as the general population, it remains for us to control other health care costs. This means becoming more efficient, perhaps through earlier detection of medical problems, perhaps through lowering of the costs of medicines or perhaps through the use of technology that will make more efficient use of physicians time.

Third, Canada could significantly increase immigration. This is another approach that will not be very well received in many quarters. Today we have many concerns about unemployment and the potential burden to society of new immigrants. However, immigration of young adults who are seeking better opportunities and who have many productive years to go, will add to the employment base and generate additional income to pay for the system. They will also help to generate a domestic market to consume the fruit of their labors. They may be expected to have a higher birth rate than the indigenous population and this will help to support the system. These aspects should outweigh the additional costs that they will create. Canada is a high country with large empty spaces. In terms of weather, many of these open spaces are rather intimidating and formidable. But after having lived through two Winnipeg winters now, I can honestly say that -30 degrees isn't as bad as it sounds. You simply put on a warm parka when you go out and you can live through the winter quite happily. Also modern cities have the benefits of indoor malls, underground passages, overhead links, etc. The key to making immigration work, I think, is to somehow control the destination of immigrants so that they don't all congregate in the three largest cities that are getting overcrowded.

Perhaps the most obvious action that could be taken is to cut back the benefit programs. For example, OAS and GIS are programs that are considered by some people to be temporary. The idea being that as private pension programs and CPP become more mature, they will cover more people and so there will be less need for government supplements and demogrants. This has already been recognized to some extent in our projection of declining utilization rates for some of the programs. However, I believe that such programs are very deeply ingrained in the Canadian fabric, and that it will be very difficult to cut back. A few years ago we saw how unified the population was to the government's announcement that it was limiting indexing of OAS. The government very quickly backed down after that hue and cry.

Another solution that has been suggested, at least as far as dealing with the demographic problem, is to shift public finances from programs for the young to those for the elderly. Again there are difficulties in doing so, both practically and politically. Indeed in today's environment, there is a lot of public support for spending *more* on the young through better child care programs.

Yet even though some of these approaches may be very difficult to promote, perhaps making politicians and the media aware of them, will set the ground work for gradual changes in attitude so that we will be able to afford what Canadians by and large consider a pretty good system.

There is one more solution that can help. We need all Canadians to go out there and make babies. Activities leading to an increase in the fertility rate is one of the most enjoyable ways of providing the additional working age population needed to pay for our social security benefits.

Now let me introduce our next speaker, Mr. John C. Wilkin.

MR. WILKIN: Last year the Committee on Social Insurance undertook the task of projecting the expected costs of the various social insurance programs in the United States and Canada. The first step in our investigation was to decide which programs to include in our projection. The current costs of our social programs are known and financed, therefore we reasoned that the public would best be served by investigating those programs whose future costs were likely to be greater than their present costs. We concluded that the two characteristics that were most likely to lead to increasing costs were programs for the aged (whose costs will go up as the baby boom generation begins to retire) and programs that pay for health care (whose costs are increasing faster than prices and average wages). Our goal then was to publicize the likely future costs of these social insurance programs and to stimulate discussion on how these costs can be met or the programs changed to lower their costs.

Our second step was to summarize any official projections that existed for these programs. The most authoritative and readily available projections are for the Social Security programs. By Social Security, I mean specifically the following four programs:

1. The Old-Age and Survivors Insurance (OASI) program,
2. The Disability Insurance (DI) program,
3. The Hospital Insurance (HI) program, and
4. The Supplementary Medical Insurance (SMI) program.

The first two of these programs taken together are often referred to as the OASDI program, which in turn is often all that is meant by the term "Social Security." The second two programs taken together are often referred to as Medicare. Because the term Social Security is often used to mean only the OASDI program, one must be careful in understanding exactly what is meant in discussions on the cost or financial status of Social Security.

This is an important point. Currently, there are three well-known facts about the financial status of the OASDI program. The first is that it is running large annual surpluses that will accumulate large trust funds. The second is that its ultimate tax rate is projected to be significantly lower than its costs (by about 2.7% of payroll). The third is that it is judged to be in good financial shape, on average, over the long-range period, i.e., it is in long-range close actuarial balance. The picture changes, however, when discussions include Medicare. In particular, when the HI program is combined with the OASDI programs, the surpluses are not as large, the trust funds do not grow to extremely high levels, and the combined system is out of long-range close actuarial balance. Efforts to combine projections for these programs are hampered somewhat by the lack of comparability of the information projected. In particular, official

282

projections are not made of the total long-range cost of Social Security (OASDI, HI, and SMI) or of the operations of the trust funds combined. I will summarize the information that is available and then tell how the Committee on Social Insurance has attempted to fill in the gaps.

For each of the four programs, a trust fund has been established as a separate account in the United States Treasury. These trust funds are held by Boards of Trustees under the authority of the Social Security Act. There are three separate Boards of Trustees, because only one Board is responsible for the OASI and DI trust funds. The Boards, although legally different, have similar compositions: They all are composed of five members, three of whom serve in an ex-officio capacity; the Secretary of the Treasury, the Secretary of Labor, and the Secretary of Health and Human Services. The other two members, Mary Falvey and Suzanne Denbo Jaffe, are members of the public serving four-year terms which began on September 28, 1984. By law, the Secretary of the Treasury is designated as the Managing Trustee, and the head administrator for each program serves as secretary to the Board. The Board of Trustees must report to the Congress each year on the operations and status of the trust funds. These reports are usually referred to as the Trustees Reports.

In order to fulfill these obligations, the Trustees Reports provide the following information:

1. A statement on the long-range actuarial balance of the OASI, DI, and HI programs, which are financed with a payroll tax. No such statement is made for the SMI program, which is financed with enrollee premiums and government contributions.

2. A projection of the "Contingency Fund Ratio" for the OASI, DI, and HI programs. This ratio is defined as the assets at the beginning of the year expressed as a percentage of the outgo during the year. Thus, it represents the proportion of the year's outgo that is available at the beginning of the year. This ratio is shown for 75 years for the OASI and DI programs and for 25 years for the HI program, but not after the year in which the trust fund is projected to be exhausted. Special mention is made whenever the trust funds are projected to be exhausted. No such ratio is presented for the SMI program. Instead the SMI Report presents the ratio of the program's excess assets to its liabilities, where the program's assets refer to its trust fund balance, its liabilities refer to the benefits incurred but unpaid, and the excess assets refer to the assets minus the liabilities. Future commitments of the program are ignored in computing liabilities and future income is ignored in computing assets.

3. A projection of the year-by-year income and outgo of the programs. The figures are shown in dollar amounts for five years for the OASI and DI programs, for up to ten years for the HI program, and for three years for the SMI program. The figures are also expressed as a percent of taxable payroll for 75 years for the OASDI and HI programs, but not for the SMI program.

The concept of long-range actuarial balance is applied to the OASI, DI, and HI programs, but not to the SMI program, because the OASDI and HI programs are financed by a payroll tax that is legislated for all future years, while the SMI program is financed by premiums and related general revenues that are determined one year in advance.

Basic to the discussion of the actuarial balance are the concepts of "income rate" and "cost rate," each of which is expressed as a percent of payroll. The taxable payroll is determined in such a way that the income rate can be defined as the sum of the combined employee - employer tax rate scheduled in the law and, for the OASDI programs, the rate of income from taxation of benefits expressed as a percent of payroll. The income rate excludes interest earnings. The cost rate is the expenditures (or outgo) of the program expressed as a percent of the taxable payroll. The cost includes benefits payments and administrative expenses. For any year, the income rate minus the cost rate is referred to as the "balance" for the year.

In order to determine the long-range actuarial balance of the program, these 75 figures are summarized into a single number. This simplification will necessarily conceal the year-by-year pattern of costs and balances. Ever since the 1973 trustees, Report the long-range actuarial balances of the OASDI programs have been evaluated on the basis of a 75-year average method. In 1985, the HI program adopted the same 75-year period. Under this method, the long-range actuarial balance is determined as the arithmetic average of the annual balances over the next 75 years. If the actuarial balance is negative, the program is said to have an actuarial deficit, and if the balance is positive, the program is said to have an actuarial surplus.

Related to the concept of actuarial balance is that of "close actuarial balance." The OASDI programs are said to be in close actuarial balance for the long-range period if the estimated average income rate is between 95% and 105% of the estimated average cost rate. No such measure of close actuarial balance is used for the HI program.

The following table summarizes the long-range actuarial balances of the Social Security programs as presented in the 1987 Trustees Reports:

Program	Income Rate	Cost Rate	Balance	Income to Cost Ratio
OASI	11.46	11.89	-0.43	96.4%
DI	1.44	1.63	-0.19	88.3
OASDI	12.89	13.51	-0.62	95.4
HI	2.90	5.20	-2.30	55.8
OASDHI	15.79	18.71	-2.92	84.4
SMI	----	----	----	----

Source: 1987 Trustees Reports, U.S. Department of Health and Human Services, Social Security Administration

These results show that the OASI program is in close actuarial balance, but that the DI and HI programs are not. The OASDI programs combined, however, are in close actuarial balance, so that a simple reallocation of tax rates could bring both programs into balance.

The HI program, on the other hand, is under financed over the long-range period, with the projected income representing only 56% of the projected cost. In the 1987 Trustees Reports, the Board of Trustees urged the Congress to take early remedial action to bring future HI program cost and financing into balance.

LONG-RANGE COSTS OF SOCIAL INSURANCE

The HI Trustees Report could adopt a measure of "close actuarial balance" similar to that used in the OASDI report. A test of actuarial soundness is likely to be more successful in stimulating action when it employs a critical value or tolerance band. Requiring an exact balance between cost and financing is impractical. Having a critical value provides a line of demarcation from which a categorical statement as to whether the program is financially sound or not can be made. If the program is not judged to be financially sound, then remedial action should be urged.

Currently, for the HI program, there is little need for a definition of close actuarial balance. The HI program is so far out of balance, that there is nearly unanimous agreement that the program is not sound over the long-range period and that action is necessary to bring it into closer balance. The legislated income provides for only 56% of the expected cost of the program over the next 75 years, and the trustees are urging action. Once remedial action is taken, however, a need for a definition of close actuarial balance will arise. If the program is closely balanced over the long-range period, but gradually slipping out of balance, it will be difficult to convince the Congress that action is necessary at the appropriate time without specifically judging the program to be outside of "close actuarial balance."

The SMI program could be considered actuarially sound over the long-range period because the law provides for a mechanism that could yield, in all but the most extreme circumstances, adequate financing of the program indefinitely. The mechanism relies on the promulgation of the premiums to be charged the enrollees and the government matching amounts. The premiums are promulgated at the beginning of October each year, and are in effect for the following calendar year. The assumption in this method is that no matter what the increase in the premium, and no matter what the level of the premium, the enrollees and the government will be willing and able to pay the bill, although the source of the government revenues is not specified.

Currently, there is much discussion about the measure of actuarial balances for the OASDI programs. Much of this discussion centers around whether or not the large Trust Fund accumulations that will occur under present financing, as well as the interest earnings that will result, constitute real financing since the monies are expected to be no more than a debt of the general fund of the U.S. Treasury. It seems clear to me that these monies are real obligations of the U.S. Government and therefore cannot be dismissed as meaningless. I think that where many people have a problem with these obligations is that it is not clear now what action the government will take to raise the money when needed to pay the benefits. These discussions tend to divert emphasis away from what may be a more important issue, namely, that the government and the public be aware of the total future costs of the program so that they can adequately plan for meeting those costs, whether it be by payroll taxes or other types of taxes, or changing the programs to lower those costs.

With this in mind, one can take a look at the SMI program from a different perspective. The SMI program is planned to be financed by general revenues, but the measures which the government will take to raise the needed revenues have not been specified. Again it would seem that it is important to project the SMI costs and to plan how to meet them.

285

PANEL DISCUSSION

In order for a program to be considered financially sound, it must have enough
funds on hand to pay benefits as they become due. This ability to pay benefits
during the short-range period is measured by the "Contingency Fund Ratio,"
which is defined as the trust fund assets at the beginning of a year divided by
that year's outgo. In the OASDI Trustees Report, the assets include advance
tax transfers from the general fund that represent the taxes that will be col-
lected during the month. In the table presented here, these advance tax trans-
fers have been excluded so that the OASI and DI ratios are on the same basis as
the HI and SMI ratios. These transfers started after the 1983 amendments.

Contingency Fund Ratio

Calendar Year	OASI	DI	OASDI	HI	OASDHI	SMI	Total
1970	101	126	103	47	96	9	91
1971	94	140	99	54	93	8	89
1972	88	140	93	47	87	17	84
1973	75	125	80	40	76	23	73
1974	68	110	73	69	73	30	71
1975	63	92	66	79	68	32	66
1976	54	71	57	77	60	26	58
1977	47	48	47	66	50	28	49
1978	39	26	37	57	41	40	41
1979	30	30	30	54	34	47	35
1980	23	35	25	52	29	44	30
1981	18	21	18	45	23	32	24
1982	15	17	15	52	22	36	23
1983	14	15	14	20	16	33	17
1984	12	28	14	29	17	34	18
1985	16	20	16	32	20	41	21
1986	20	31	21	41	25	40	26
1987	21	37	22	81	34	26	33
1988	30	31	30	97	43	14	40
1989	45	33	44	106	57	15	51
1990	59	35	57	111	68	17	62
1991	75	50	73	112	82	17	73
1992	92	68	90	112	94	17	84
1993	109	85	107	109	107	17	94
1994	126	103	124	104	119	17	105
1995	144	119	142	96	131	17	114
1996	162	134	159	88	142	17	123
1997	182	147	178	78	154	17	133
1998	205	156	200	66	167	17	143
1999	230	163	222	53	180	17	153
2000	257	168	247	40	193	17	164
Year of Depletion	2055	2023	2051	2002	unknown	none	---

Source: 1987 Trustees Reports, U.S. Department of Health and Human Services,
Social Security Administration and the Committee on Social Insurance
of the SOA.

During periods when outgo temporarily exceeds income, as might happen during an economic recession, trust fund assets are used to meet the shortfall. In the event of recurring shortfalls for an extended period, the trust funds service as a buffer that allows sufficient time for the development and enactment of legislation to restore financial balance to the program.

There is no uniformly agreed upon target value of allowable range for the contingency fund ratio. The 1971 Advisory Council on Social Security recommended a value of 100% with an acceptable range of 75% to 125%. Specifying such a narrow range (as opposed to specifying only a minimum desired level) is consistent with a current cost or pay-as-you-go financing method, which the Advisory Council recommended.

The 100% value may have been recommended by the Advisory Council partly because that was the value at the time. However, with the passage of the 20% benefit increase in 1972 and the high inflation during the mid-1970s, the actual ratio went below 75% in 1974, and the recommendation by the Advisory Council was not implemented. The OASDI contingency fund ratio continued declining and reached a low point of 14% in 1983. It is currently about 41% and rising rapidly.

For the HI program, on the other hand, the Board of Trustees has, since 1972, recommended a desirable ultimate trust fund ratio. In the 1972 to 1980 reports the Board recommended a 100% level, while in the 1981 and subsequent reports it has recommended a 50% ultimate level. The fund operated at levels between 40% and 79% from 1972 to 1980, and between 20% and 52% from 1981 to 1986. The low point of 20% was the result of the financial troubles of the OASI Trust Fund which had to borrow from the HI Trust Fund. Currently, the HI Trust Fund ratio is about 100% and rising slowing, although it is projected to start declining within a few years.

There are several places in the law that specify a trust fund ratio, but all of them have limited applicability. One of the more important ratios is defined under the so-called "stabilizer" provision of the 1983 amendments. If the trust fund ratio of the OASI and DI programs combined is below a specified level, then the automatic benefit increase is limited to the lesser of the increases in wages or prices. This specified level is 15% for the benefit increases for December of each year 1984-88, and 20% thereafter.

The SMI Trustees Report does not show the contingency fund ratio. Instead it shows the ratio of the program's excess assets over its liabilities. It is necessary to understand the financing method of the SMI program in order to understand this ratio. The 1987 SMI Trustees Report (p. 5) explains the financing with the following two statements: (I) "The supplementary medical insurance program is essentially yearly renewable term insurance financed from premium income paid by the enrollees, from income contributed from general revenues in proportion to premium payments, and from interest payments on the trust fund assets." (II) "In testing the actuarial soundness of the supplementary medical insurance program, it is not appropriate to look beyond the period for which the enrollee premium rate and the level of general revenue financing have been established. The primary tests of actuarial soundness, then, are that: (1) assets for years for which financing has been established be sufficient to meet the projected benefits and associated administrative expenses incurred for that

period and (2) assets be sufficient to cover projected liabilities that will have been incurred by the end of that time but not have been paid yet."

Although it may not be necessary to look beyond the period for which the premium has been established, a look into the future financing of SMI can hardly be called inappropriate. Enrollees and the general tax payers have a right to know the likely cost of the SMI program to the U.S. Treasury and the likely course of future premiums. A projection of the total cost of "Social Security" would not be complete without the costs of the SMI program.

If the per capita costs of the SMI program continue to increase at a rate faster than wages and prices, then one of two things will occur: (1) assuming the increase in the premiums charged to enrollees is limited in the increase in the CPI, the premiums paid by enrollees will represent a smaller and smaller portion of the total cost of the program; or (2) assuming the premiums are allowed to increase in proportion to the per capita costs, in which case the SMI premium will represent a larger and larger share of the OASDI monthly case payment. In the first case, the program will look more and more like any other program financed by general revenues with no need for a special trust fund or a special procedure for budgeting general revenue funds outside of the regular process.

Also, many will not see the need for actuarially determined premiums when the premiums charged enrollees are calculated by simply applying the CPI increase and the major share of the costs must be met by general revenues. In the second case, information on the future premiums would prove useful in determining the desired level of OASDI monthly benefits. The monthly benefit payable at age 62 is currently scheduled to decrease from 80% of the primary insurance amount (PIA) to 70% as normal retirement age increases from 65 to 67. Any further changes in the amounts payable must take into account the size of the SMI premium that beneficiaries will be paying.

This table summarizes the OASI, DI, HI, and SMI Trust Fund ratios. The ratio shown for the SMI program is defined exactly as for the other programs, and it was assumed that this fund ratio would remain constant at the level projected for the end of the official projection period, i.e., 17% for 1990. These results show that the OASI and DI fund ratios will continue to grow through the end of the century, but that the HI fund ratio will grow for only a few years, until 1991, and then it will decrease until it is exhausted by the year 2002. Since the combined OASDI and HI ratios continue to grow through the end of the century, a simple reallocation of tax rates would be sufficient to keep all three of the trust funds growing for many years. It is not known when the combined OASDI and HI funds would be depleted, because projections of the HI Fund are not made past the year in which it is depleted.

The contingency fund ratio is a good way of measuring the size of the trust funds during the short-range period. The OASI and DI programs use this measure, but without a critical value for judging the adequacy of the funds. On the other hand, the Trustees have stated that, for the HI program, the Trust Fund should maintain a balance of at least 50% of the next year's outgo. Failure to meet this standard places the program out of short-range actuarial balance and calls for an increase in financing, which is represented by an addition to the projected cost of the program.

LONG-RANGE COSTS OF SOCIAL INSURANCE

The OASI and DI programs should have a critical value for the minimum fund ratio below which the programs would be judged out of short-range actuarial balance, similar to that used for the HI program. The lack of a critical value for the OASI trust fund ratio probably contributed to the delay of decisive action during the 1970s and early 1980s as the OASI trust fund ratio declined steadily from 100% in 1970 to 15% at the end of November 1982.

Year-by-year projections of the income and outgo of the various Social Security programs provide the best picture of the financial status of the programs. The long-range actuarial balance and the contingency fund ratios do not reveal the total picture. The long-range actuarial balance can be viewed as a method of summarizing the 75 year projection into a figure. It is likely that the method for accomplishing this summarization, the importance of the result, and the choice of critical values will always be surrounded by controversy. It is easier to find general agreement around the general pattern and level of the future costs. The contingency fund ratio, on the other hand, summarizes the projected differences between the series of income and outgo. As such, it is the accumulation of the differences between two series of large numbers. It is too sensitive to minor changes in these two series and, because it loses its significance rapidly over time, it should not be used to judge financial soundness over the long-range period.

The following table shows the income and outgo of the OASI, DI, HI, and SMI programs in billions of dollars over the short-range period.

Calendar Year	Total Income	Outgo					Net Income
		OASI	DI	HI	SMI	Total	
1980	$157	$108	$16	$26	$11	$160	$ -4
1981	194	127	18	31	14	189	4
1982	202	142	18	36	16	212	-10
1983	236	153	18	40	19	230	6
1984	257	162	19	44	21	245	12
1985	280	171	19	48	24	263	17
1986	301	181	21	50	27	279	22
1987	322	189	21	49	32	290	31
1988	365	201	22	56	36	315	49
1989	394	215	23	62	42	341	53
1990	435	230	25	68	47	370	64
1991	471	247	26	75	53	401	69
1992	509	263	28	83	59	433	77
1993	548	280	30	90	65	465	83
1994	588	297	32	98	72	499	89
1995	631	315	34	106	80	536	96

Source: 1987 Trustees Reports, U.S. Department of Health and Human Services, Social Security Administration, and Committee on Social Insurance of the SOA

This table shows that the OASDI, HI, and SMI programs combined will be generating steadily increasing surpluses over the short-range period, reaching almost $100 billion by 1995. The increases for 1988 and 1990 are partially the result of the tax rate increases scheduled in the law for those years.

The cost of the OASI program as a percent of payroll will drop significantly between 1995 and 2005, the result of the small cohort of Depression era babies reaching retirement age which begins in 2003. This low-cost period, however, is relatively short lived. By 2010, when the baby boom generation begins to retire, the cost of the program begins to increase. This combined with the increasing costs of the other programs results in the combined costs of the OASDI, HI, and SMI programs increasing by over 50% in a 20-year period from 2010 to 2030.

The long-range costs of the Social Security programs can best be analyzed by looking at the year-by-year costs expressed as a percent of payroll. The following table shows the long-range costs of the OASI, DI, HI, and SMI programs:

Calendar Year	Income Rate	Cost Rate				Total	Balance
		OASI	DI	HI	SMI		
1970	10.10	7.32	0.81	1.20	0.50	9.83	0.27
1980	13.23	9.36	1.38	2.20	0.97	13.91	-0.68
1990	17.45	9.92	1.06	2.84	1.91	15.73	1.73
2000	17.85	9.15	1.16	3.48	2.28	16.07	1.78
2010	18.14	8.87	1.58	4.01	2.47	16.93	1.21
2020	19.10	11.62	1.81	4.98	3.28	21.69	-2.59
2030	20.20	13.97	1.87	6.23	4.25	26.32	-6.12
2040	20.47	14.10	1.80	6.73	4.48	27.11	-6.64
2050	20.49	13.93	1.87	6.76	4.48	27.04	-6.55
2060	20.57	14.02	1.84	6.74	4.56	27.16	-6.58

Source: 1987 Trustees Reports, U.S. Department of Health and Human Services, Social Security Administration, and the Committee on Social Insurance of the SOA

In this table, the SMI costs have been projected on the basis of the 1987 Trustees Reports alternative II-B set of assumptions. They are shown as a percent of payroll for comparison purposes. They are not the official projections of the Trustees. Also the income rate includes the cost of the SMI program (whose income nearly matches its outgo every year) in addition to the employer employee combined Social Security payroll tax and the income from the taxation of OASDI benefits expressed as a percent of payroll.

The important points that are made from this table are: (1) that the total cost of "Social Security" is projected to increase by almost 70% over the 40-year period 1990-2030, from about 15.7% of payroll to about 26.3% of payroll; (2) that while OASDI is projected to increase by about 45% the projected increase for Medicare is about 20%, and (3) the deficit (after assuming the equivalent of an increase of slightly over 3% of payroll in general revenue tax increases for SMI) will be about 6.5% of payroll.

As mentioned before, it is very important to be aware of the total likely future costs for Social Security. Without this information, the burden on future tax payers is unknown. A problem cannot be addressed until it is revealed. In addition to including all of the relevant programs in the projection, it is important to be aware of the sensitivity of these costs to various assumptions.

LONG-RANGE COSTS OF SOCIAL INSURANCE

This table does not tell the whole picture. Another closely related social
program whose cost is likely to increase significantly is Medicaid, in particular,
that part of Medicaid that pays benefits to the aged population, nursing home
benefits. Therefore, the Committee on Social Insurance has made projections,
with a slightly different set of assumptions, that include Medicaid's nursing home
benefits. Other programs whose costs could have been included but did not
include the pensions of Federal civilian employees, the military, and the Veterans
Administration pension and health costs.

The following table summarizes these projections. These projections assume that
the total fertility rate and real wage increases will remain at their recent levels
of 1.8 children per woman and 1.0% per year.

Calendar	Cost Rate					
Year	OASI	DI	HI	SMI	Medicaid	Total
1980	9.36	1.38	2.20	0.97	2.01	15.92
1990	10.09	1.06	2.91	1.80	2.12	17.98
2000	9.70	1.19	3.60	1.83	2.20	18.52
2010	9.33	1.63	4.14	2.01	2.36	19.47
2020	12.24	1.88	5.43	2.72	2.69	24.96
2030	14.96	1.99	7.23	3.64	3.17	30.99
2040	15.63	1.95	8.10	4.01	3.59	33.28
2050	16.00	2.06	8.51	4.22	3.85	34.64
2060	16.53	2.02	8.89	4.48	3.93	35.85

Source: Committee on Social Insurance of the SOA

This table shows that the costs of these social insurance programs could double
from 1990 to 2060, from about 18% of payroll to almost 36% of payroll. Since,
currently the income to the OASDI and HI programs exceeds their costs by about
2% of payroll, if these projections were actually realized, we would have to raise
taxes by the equivalent of 16% of payroll to pay for the benefits currently
promised. These increases would have to come from payroll taxes (for the
OASDI and HI programs) and from the general revenue taxes (for the SMI and
Medicaid programs). I doubt seriously that such high taxes would ever come
about. Although some of these taxes might not be needed if actual experience
turns out better than what is assumed, it is likely that the program will have to
be changed in the future to lower costs.

The future high costs of these programs are mainly the result of two phenomena:
(1) the increase in the ratio of the aged population to the working age popula-
tion (which I will refer to as the demographic load), and (2) the medical care
costs rising faster than payroll.

One way to quantify the demographic load is to define it as the ratio of the
number of people aged 62 and over to the number of people age 19 to 62. I
will refer to age 62 as the retirement age, since in this analysis it represents
the age at which a person is expected to switch from a member of the working
age population to a member of the population eligible for benefits that are pro-
vided to the aged. When the retirement age is 65, this ratio is sometimes re-
ferred to as the aged dependency ratio.

As shown in the next table, the demographic load was 16% in 1940 (12% at age 65 which is the age at which retirement benefits first became available when the OASI program first began to pay benefits in 1940). Currently, in 1988, it is 26%. It is expected to remain between 26% and 27% until 2005, and then to climb rapidly to 49% in 2030. This is an increase of over 80% within the span of 25 years.

AGED DEPENDENCY RATIOS AT SELECTED RETIREMENT AGES
(1987 OASDI Trustees Report Alternative II-B)

	Age			
Year	62	65	67	70
1940	.156	.116	.093	.064
1950	.187	.138	.111	.077
1960	.228	.173	.141	.101
1970	.241	.184	.153	.114
1980	.250	.194	.162	.121
1990	.264	.210	.177	.134
2000	.265	.216	.188	.149
2010	.301	.229	.192	.148
2020	.400	.302	.249	.185
2030	.487	.393	.334	.254
2040	.488	.403	.354	.285
2050	.497	.401	.346	.275
2060	.498	.407	.354	.282

Source: *Social Security Area Population Projections: 1987*, Actuarial Study No. 99 by Alice H. Wade, A.S.A., U.S. Department of Health and Human Services, 1987, p. 41.

If we look at the year 2060, we can see how much the ultimate demographic load would decrease as we raise the retirement age. (In this context the retirement age references to the age at which full rate Social Security benefits become payable.) The demographic load drops from 50% at age 62, to 41% at age 65, and then to 35% and 28% for ages 67 and 70, respectively. Thus the demographic load at age 70 in 2060 (28%) is only slightly higher than the demographic load at age 62 currently (26%).

For each year that the retirement age is increased, the cost (as a percent of payroll) of the programs that pay benefits to the aged would be reduced by about 6%. Raising the age from 62 to 65, however, would reduce the cost of only the OASI program. The reduction in the year 2060 would be about 1% of payroll for each year of increase, but about 20% of this reduction would be offset by an increase in the cost of the DI program, leaving a net reduction of about 0.8% of payroll. Above age 65, each year of increase in the retirement age would reduce the cost of all of these programs combined by a little less than 2% of payroll. The retirement age would have to be raised to over age 70 in order to keep the costs of these programs from increasing much higher than their present level, as can be seen from the following table.

Of course, raising the retirement age may be looked upon as a real hardship inflicted on elderly persons who are unable to work. Let's ignore the demographic load, which is affected by fluctuations in fertility, and concentrate only

RETIREMENT AGES AT SELECTED AGE DEPENDENCY RATIOS
(1987 OASDI Trustees Report Alternative II-B)

Year	Dependency Ratio		
	.20	.25	.30
1940	59	57	55
1950	61	59	57
1960	63	61	59
1970	64	62	60
1980	65	62	60
1990	66	63	60
2000	66	63	60
2010	67	64	62
2020	69	67	65
2030	72	70	68
2040	74	72	69
2050	74	71	69
2060	74	72	69

Source: *Social Security Area Population Projections: 1987*, Actuarial Study
No. 99 by Alice H. Wade, A.S.A., U.S. Department of Health and
Human Services, 1987, p. 42.

on changes in mortality, which better reflects the general health of the popula-
tion. For males, life expectancy at age 65 has increased from 11.9 years in 1940
to 14.7 in 1988 and it is expected to increase to 17.7 years in 2060. For fe-
males, the pattern is similar with corresponding life expectancies of 13.4, 19.0,
and 22.8 years for 1940, 1988, and 2060, respectively.

It would seem reasonable, from the point of view of society as a whole, that not
all of the additional years of life expectancy should be spent in retirement. If
we assume that these additional years of life expectancy in the future should be
split between some additional years of productive work and some additional years
of leisurely retirement in the same proportion as are the current life expec-
tancies, then a retirement age of age 65 currently would have to be raised to
over age 68 in 2060, as shown in the following table.

Increases in the retirement age (i.e., increases in the earliest age of eligibility
to benefits which attack the demographic load as opposed to increases in the
normal retirement age which reduce average benefits) would seem not only neces-
sary, but justifiable based on increases in life expectancies.

Of course there are other means, besides increasing the retirement age, to
reduce the demographic load. These relate to increasing the size of the working
population, namely increasing fertility or increasing immigration. Increasing
fertility can have a significant effect on the tax rates necessary to support these
programs in the future. For each 0.1 children per woman increase in the total
fertility rate, the ultimate cost (when expressed as a percent of payroll) of
these programs would be reduced by about 3.5%. Although to rely on this to
reduce the cost of these programs by 50% would seem unreasonable, requiring a
total fertility rate of about 3.2, any increase above the current level of 1.8
to this country each year, the costs of these programs would be reduced by
about 1%. Again, relying on immigration to totally offset the projected increases

RETIREMENT AGES EQUIVALENT TO AGE-65 RETIREMENT IN SELECTED
BASE YEARS, MEASURED AS THE RATIO OF RETIREMENT
EXPECTANCY TO TOTAL WORK EXPECTANCY AT ENTRY
INTO THE LABOR FORCE
(in years:months)

	Base Year of Age-65 Retirement				
Year	1940	1950	1960	1970	1980
1940	65.00				
1945	66.00				
1950	66.09	65.00			
1955	67.04	65.08			
1960	67.04	65.08	65.00		
1965	67.07	65.10	65.03		
1970	68.00	66.03	65.08	65.00	
1975	68.11	67.02	66.06	65.10	
1980	69.07	67.10	67.02	66.06	65.00
1985	70.04	68.07	67.11	67.03	65.09
1990	71.01	69.03	68.07	67.11	66.04
1995	71.07	69.09	69.00	68.04	66.10
2000	71.10	70.00	69.03	68.07	67.01
2025	72.09	70.10	70.02	69.06	67.11
2050	73.08	71.09	71.00	70.04	68.09

Source: *Equivalent Retirement Ages: 1940-2050*, Actuarial Study Note No. 105 by Francisco Bayo, A.S.A., and Joseph F. Faber, U.S. Department of Health and Human Services, 1981.

---

in costs for these programs would be unreasonable (requiring an annual immigration of about 5 million, ten times current levels).

The above projection assumes that health care costs ultimately increase at a rate slightly less than wages and that age-sex specific utilization rates remain constant. Thus the increases shown over the long-range period are the result of demographic factors. These assumptions assume an improvement over recent experience, when health care costs have been rising faster than prices and wages.

The rate of increase of HI costs has slowed significantly since 1984. The experience under the prospective payment system enacted in 1982 as part of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) suggests that it is an effective means of constraining the growth in hospital payments.

Controlling physician's reimbursements is more difficult. The one possible method for controlling SMI cost, however, may be some form of capitation system. One major problem with both prospective reimbursement and capitation is that they limit government costs by limiting government payments not by controlling the actual cost of providing the services. This is the main reason that the government has not been more successful in enrolling persons eligible for Medicare into HMOs.

One way to solve Medicare's future financial problems, in addition to raising the age of eligibility to Medicare, would be to raise future taxes to pay for the benefits. Some of this increase could be paid without lowering standards of living if the nation's work force continues to increase its productivity. Another way to solve these problems may be for the Medicare program (possibly including long-term care and drugs) to adopt the three legged stool philosophy of the OASDI program. Under this philosophy, Medicare would be only one source of funds for the health care costs of the aged. The other two would be employers and private savings. Medicare would only provide a floor of protection for health care, possibly emphasizing catastrophic protection.

Mr. Thomas A. Rowley will discuss the National Health Service in the United Kingdom (U.K.).

MR. THOMAS A. ROWLEY: I am going to talk about the National Health Service in the U.K. and some of the problems it has faced and some of the solutions being considered. Let me begin by stating the obvious. A national health program is necessarily evolutionary by nature. I am not sure if this was always the case, but it is certainly true today. A program designed in the mid 1940s has been called upon to absorb the impact of advances in medical technology, dramatic changes in the population demographics, and the influx of immigrants from all over the world, to say nothing of major increases in drug abuse and the arrival of AIDS.

The original concept of the National Health Service was the provision of good quality medical treatment, free of cost and universally available. Now it is clear that what is technically possible is not affordable within the limits of National Health Services finance. The result is a national debate which will redefine the role of the National Health Service in British society.

The four topics emerging as crucial in the national debate are:

1. To improve efficiency.
2. To assign priorities.
3. To consider alternative sources of financing to help support the system.
4. To rethink the existing funding process.

I would like to talk briefly about each of these four issues, because many of the items being discussed within a U.K. context have relevance to today's topic. Before doing so, I do need to fill in some background on why the NHS is under pressure today.

While many agree that the National Health Service suffers from a chronic short-age of funds, very few would see the solution as being simply injecting more money. About 20 years ago one of Britain's most controversial politicians, Enoch Powell, wrote what has been described as a seminal paper on the subject of national health financing. He pointed out that, in effect, demand for a given medical treatment would rise faster than the system's ability to deliver that treatment. To contain a national health program within reasonable bounds it was therefore necessary to ration financial resources -- recognizing that, in doing so, there would now be a constant demand for additional financing from the system. Indeed, practitioners within the system will find that their best inter-ests are served by a constant denigration of the system itself.

PANEL DISCUSSION

So, recognizing that the NHS system itself is designed to create a constant
demand for additional finance, what are the pressure points on the system?
Let's take a look at some of the critical items:

1.   Inadequate financing (probably). Previous comments might have left the
     impression that complaints about financial shortfall may be perceived rather
     than real. While it is true that there may be some confusion here, I think
     most observers would accept that the National Health Service is too lean
     financially. We do know that the amount spent on health care in the United
     Kingdom increased from 3.9% of GNP in the early 1960s to 6.2% in the mid
     1980s. At the same time the average expenditure among developed econo-
     mies rose from 4% of GNP to around 8% of GNP. The United States, inci-
     dentally, rose from 5.3% to 10.8% in the same period. Thus, in the past 25
     years Britain's relative expenditure on health has fallen from about average
     to the lowest level in Europe.

     To paint a more complete picture, I think I should add that the situation
     has been dramatically different in other areas of public expenditure. While
     the National Health Service's share of public expenditure rose only margin-
     ally from 12% to 13% in the last 30 years, other social security benefits,
     (unemployment, retirement, etc.) rose from 17% of public expenditure to
     33%.

2.   Waiting lists. Right now around three quarters of a million people are
     waiting for an empty bed in order to have some non-urgent NHS surgery.
     This represents a 24% increase in the last ten years, but in the same
     period, available beds fell by 15%. The result is that the waiting list grew
     from 1.3 per bed in the mid 1970s to around two per bed in the mid 1980s.
     Again, to complete the picture I should mention that record numbers of
     patients were treated in this period and the efficiency (measured as the
     throughput per bed) rose by 33%.

3.   Electoral timeframe. For all its problems opinion polls continue to show that
     the National Health Service is extremely popular and that most of the voting
     population supports a "hands off" attitude toward the NHS. Most strategies
     for fixing the NHS will require a timeframe in excess of the five years
     guaranteed to any incoming government. Accordingly, there is a delicate
     political situation which, from time to time, leads to cries for a bipartisan
     approach to the problem. Unfortunately no one has yet found a way to
     make a 40 billion dollar public expense nonpolitical.

     Exacerbating this problem is the fact that, as we will see shortly, some of
     the issues under debate would require some form of intervention between
     the physician and patient -- at least to the extent of insuring that the
     physician is well versed in current technology and that the physician is
     prepared to balance cost and quality of life decisions in a budgetary sense.
     There is no doubt that many medical practitioners within the NHS resent
     and resist what they perceive as unwarranted interference by the adminis-
     tration in medical matters.

4.   Consumer incentive. Part of the popularity of the NHS is that, in the eyes
     of the public, it is essentially free at the point of supply. True there is
     some cost sharing for prescription drugs and for dental and vision care,
     but essentially the service is free for any significant medical treatment.

The bad news is that the consumer therefore has no incentive to be a sensible or educated consumer. One quite recent suggestion was that patients should be required to contribute, say, £15 per day during hospitalization with a maximum of £75 per visit. In addition to being a valuable contribution to the cost of hospitalization, this might also have provided some modest incentive to minimize hospital stays. Very recently Margaret Thatcher appeared to rule out any direct payment of this type in the foreseeable future.

Interestingly, the general public seems to be unaware of some critical cost sharing aspects of the National Health Service. For example, many would be surprised to learn that the NHS pays for only 65% of dental costs and only 41% of vision care costs. More startling, perhaps, is the fact that the National Health Service provides just over one half of institutional care costs for the elderly.

5. Lack of competition. Because of the way the system works, there is effectively no competition between physicians and no competition between hospitals. Accordingly, there is little external pressure to stay up to date on modern diagnostic and surgical procedures. One symptom of this is the somewhat frighteningly low incidence of certain surgical procedures compared with generally accepted norms.

    Perhaps the most outstanding is that bypass surgery in Britain is performed at approximately one seventh of the equivalent rate in the United States. Informed opinion states that, in a perfect world, Britain would increase bypass surgery by a factor of 3 and the United States would reduce by a factor of 2. Whether or not the latter is true I would hesitate to judge, but is very clear that the procedure is seriously under utilized in the United Kingdom. Similar, if not so dramatic, traits are apparent in a number of technically advanced procedures.

6. Aging population. There has been considerable discussion over the last decade about the problems of an aging workforce. One problem concerns the deteriorating ratio of active workers to beneficiaries under the system. My own view is that this particular problem concerns the collection and distribution mechanism of Social Security and not its essential economics. I believe what matters is the portion of production which Social Security will consume and whether total production itself can be maintained with diminished workforce. Some of the earlier demographic concerns were expressed at a time of full employment when a declining workforce appeared to be a real possibility. Right now, in both Britain and the U.S. there is a fair amount of unemployment to take up any slack which might emerge in the workforce as a result of an increasing number of retirees.

    The other aspect, the proportion of production consumed by Social Security, is the major problem when we consider an aging population. This is a very real concern in the area of medical benefits. It is a fact of life that medical costs increase with advancing age and technology is making this problem worse rather than better. To date this has not been a problem in the U.K., but demographic analyses are now indicating that significant problems can be expected in the near future.

PANEL DISCUSSION

I would like to take this opportunity to mention a few items which have had a significant effect on health care costs in the United States, but have a much lesser, or at least different impact in the U.K.:

1. Legal system. The U.K. legal system is basically geared to the concept of the identification and reimbursement of financial damages in the event of proven liability. Awards are not subject to massive increase for punitive damages. As a result, doctors and hospitals do not walk in fear of malpractice suits -- nor are they driven to practice defensive medicine. While this could lead to a relative underutilization of some sophisticated diagnostic procedures, it certainly has a dampening effect on escalating medical costs. During a recent visit to London I asked one NHS doctor if he worried about the financial impact of a malpractice suit and he explained that he essentially insured through a central fund. The cost to him was about the same as my car insurance in the United States.

2. Medical staff compensation. The NHS accounts for 92% of total health care expenditure in the U.K. Consequently, the vast majority of doctors and nurses rely almost exclusively on the National Health Service for their income and support. Indeed, 44% of all National Health Service expense is the payroll bill for nurses. As a consequence of this, it would be fair to say that the compensation of medical personnel in the U.K. has not been a source of financial concern in the health care business. Arguments and disputes are, of course, a constant news item, but the general level of personal income is vastly lower than it would be in a private sector system.

    Indeed, there is no doubt that personal rewards in the small private sector in the U.K. are substantially higher than the NHS. This has caused an inevitable migration of the highest qualified staff out of the NHS.

3. Whether medical expenses are provided free of cost under the National Health Service in the U.K. or on a first dollar coverage basis in the US corporate medical plan, the service would be free to the consumer at the point of supply. The potential problem is the same, but the solution in the U.K. must be found on a national basis. In the US we now encounter a broad range of deductibles, coinsurance, mandatory second opinions, utilization reviews, preferred provider organizations and a host of other cost containment or cost management procedures tailor made to individual corporations. In essence, multiple options can and have been brought to bear on the problem in the US.

4. Expectations. In my experience the expectations of the American public are much higher than their British counterparts when it comes to medical treatment. This is a polite way of saying that many Americans would not tolerate what the British have come to take for granted. Chest x-rays and ECGs performed on the spot while you wait are commonplace in the US. It is still quite likely in the U.K. that it would be necessary to make an appointment with a local hospital and then wait several days for the results to be processed, analyzed and returned to the local physician.

    There is, of course, another side to this. In the US culture, people tend to demand the best and expect to pay for it. The state is not perceived as the natural provider of services. This is a fundamental difference in the cultures of the two countries and is certainly not limited to health care.

I would now like to run quickly through some of the issues which seem to be emerging in the national debate about the future of the NHS in Britain. You may recall that earlier I mentioned the four key areas of efficiency, assigning priorities, alternative financing and rethinking the funding process. I now would like to take a few moments to go briefly through each one:

1. Efficiency. There is a strong belief that throwing additional money into the NHS will not improve the situation unless the fundamental efficiency of the system is addressed. This might seem like a motherhood statement, but I must emphasize that we are not talking about tightening up the old administrative procedure. Rather, thoughts are surfacing about some radical changes in the way in which the system allocates its resources and who makes the decisions. Right now doctors and hospitals have comparatively little incentive to tidy up their acts because in large measure their funding is not predicated upon good performance. The view is emerging that some form of "internal market" should be developed within the system. Much interest is being shown in an extension of the US HMO system. There is attraction in the idea of medical expenses being prepaid for a group of people with local agents for the fund comprising those prepayments having the power to negotiate the best deal they can with regional specialists to support general physicians at the family level. An extension of this might look a lot like a PPO where the HMO like body would negotiate favorable terms for certain hospitals in the area -- probably on a Diagnostic Related Group driven fixed cost basis. This would encourage efficiency within the hospitals in handling particular procedures, but would also direct funding to those hospitals most frequently receiving referrals from practitioners within the HMO attachment area.

    One controversial proposal is to turn the NHS budget over to physicians at the family practitioner level so that those people most closely in touch with their patients' needs will have responsibility for the deployment of financial resources. In other words, to drive the system from the bottom up rather than the top down.

    As I said, we are talking about radical changes in the system of delivery and not just tidying up administrative procedures.

2. Priorities. If resources are to be rationed in some fashion, someone must decide which procedures get priority. Of course, there is no dispute about the priority of life-threatening situations, and the NHS continues to enjoy an excellent reputation when functioning in medical crisis mode. Of deeper concern is the allocation of resources for more elective procedures. This is a potentially delicate area where quality of life is balanced against extension of life at all costs. The significance to the NHS is that the existing system probably attaches more importance to how long a patient has been waiting for treatment than to the question of whether the improvement in quality of life per dollar spent with patient "A" is sensible compared to patient "B" or "C."

    I am not sure it is necessary to confront the ultimate moral dilemmas in order to inject into the system a realization among physicians that there may be a broader constituency than the patient they are currently examining. It is recognized that doctors will need to be kept better trained on current procedures and expectations and this may mean patients moving more frequently from one doctor to another.

3.   Alternative financing. A fair proportion of the population continues to
      advance the cause of totally free national health service -- frequently, as I
      have mentioned, apparently not appreciating that there are already some
      critical areas where the National Health Service finances a much reduced
      percentage of the cost. Others have chosen to make political capital out of
      the situation and out of the inherent popularity of the NHS. The result
      has been twofold. First, attempts to introduce direct cost sharing have
      been resisted. Second, some political parties have found it fashionable to
      denigrate the role of the private sector in the provision of health care on
      the grounds that it is "anti NHS."

      The national debate must explore this issue more fully, perhaps moving
      toward a genuine partnership between the public and the private sector. It
      has been suggested that this partnership could jointly finance special
      facilities or, at the very least, allow for some contracting out of services
      between the two sectors (e.g., renting beds in NHS hospitals to private
      facilities).

      It has also been pointed out that failure to achieve some form of partner-
      ship will continue to promote the unfortunate situation where medical staff
      is trained by the National Health Service and then moves to the private
      sector for more money. A jointly financed nurses training facility would
      represent a major advance.

      A recurring theme in this area is the tax status of company sponsored
      medical plans. The main thrust of these plans is in the area of elective
      surgery where the National Health Service is most under pressure (as
      evidenced by waiting lists). One obvious encouragement would be to pro-
      vide some form of tax break for these plans, at least to the extent of
      excluding company contributions from the employee's taxable income.

      With an aging population, it is inevitable that institutional costs for the
      elderly will come under considerable scrutiny. You may remember my
      earlier remark that already the National Health Service pays only a little
      over half of these costs with private nursing homes of varying kinds taking
      up the balance. It has been pointed out that the generation moving into
      this area in the next few years will not only be the largest ever, but also
      the wealthiest in terms of private home ownership. We may therefore see
      the development of some form of means testing in this area.

4.   Funding process. Only 11% of costs are now covered by identifiable NHS
      contributions, with a further 3% coming from small charges for prescriptions
      and for dental and vision care. The vast bulk of expenditure comes from
      general taxation -- which means some of it is provided from corporate taxa-
      tion. While this has the advantage of protecting the funding of the
      National Health Service from the impact of a declining work force, (which
      seems to be causing tremendous problems in the United States), it suffers
      from the disadvantage that the consumer is again divorced from the finan-
      cial consequences of his health care choices.

      One suggestion is that, in rethinking the role of the NHS, focus should be
      more upon the needs of the inactive group (the old and the young) and
      should throw the active workforce more directly on to its own resources.
      Thus active workers could be in some kind of pay as you go health service
      pool where the scope and quality of medical services provided is directly

related to the willingness and ability of that group to pay for them. I think it is interesting that the idea of shifting some of the responsibility away from general taxation and into direct contributions should occur at a time when other countries are considering moves in a totally opposite direction to solve essentially the same problems of an aging workforce.

As a final comment on funding, I continue to believe that the use of some kind of deductible as a means of providing consumer incentive has not yet been adequately explored in the U.K. Although this approach has been politically difficult to date, it may be that the new climate of the NHS will give it another chance.

5. Summary and conclusion: To conclude, I would like to summarize the current status of the National Health Service.

Constant demands for additional financing, allied to developing concerns about the aging population, are forcing a national debate on the future of the National Health Service. Interestingly, this has peaked at a time when the British economy is in good shape so that what emerges may be a true rethinking of the system rather than a financially driven expenditure.

Out of this debate I would expect the following:

a. A total redefinition of the role of the NHS, particularly how it would mesh with the private sector.

b. Different expectations from the system, particularly in the area of institutional costs for the elderly.

c. More efficient use of resources with budget/delivery decisions moved closer to the patient.

I will conclude by emphasizing that whatever emerges from the debate, the NHS must still be regarded as an evolutionary program if it is to adjust to the changes of the next 40 years.

MR. WILKIN: Now let me introduce our next speaker, Mr. Stephen C. Goss, who will speak to us on the effect on the national economy of financing future social insurance and private retirement expenditures.

MR. STEPHEN CHARLES GOSS: The three speakers before me have outlined *sobering forecasts of the future level of expenditures that will be necessary in* order to maintain the package of social insurance benefits currently being provided in Canada and the United States, and the federal health benefits provided in the United Kingdom. The costs, as percent of earnings, of these comprehensive programs in both the U.S. and Canada are projected to rise far above current levels. I would like to share a few observations on the effect that meeting these social insurance costs, and the costs of certain additional non-federal retirement income flows, will have on the overall economies of these countries.

The long-range costs of social insurance programs are customarily expressed in terms of percent of earnings, or payroll, because (1) the inflated dollar levels of these costs for distant future years are difficult to relate to current experience, and (2) these costs are largely funded through taxes on earned income.

However, part of the costs of these programs is also met directly with personal and corporate income taxes, or through borrowing by the government. Therefore, a more comprehensive view that encompasses all of these sources of funding would lead us to conclude that the costs of social insurance programs are actually met from the gross national (or domestic) product.

The costs presented earlier for the comprehensive social insurance programs of the U.S. and Canada in 1987 were about 18% and 15% of payroll, respectively. Assuming a continuation of recent total fertility rate (about 1.8 and 1.7 children per woman, respectively), recent real average wage growth (about 1% per year in both countries), and indexing of the general level of benefits by average wage growth, these costs as a percent of payroll would rise to about 35% and 33% by the year 2050 for the U.S. and Canada, respectively. These projections appear somewhat higher for the U.S. because, for the U.S., costs are expressed as a percent of taxable payroll, which is about 90% of total payroll, while for Canada, costs are expressed as a percent of total earnings, or payroll.

When these projected costs are expressed as a percent of GNP (GDP), these represent about 8% of national output for 1987 and rise to somewhere between 14 and 18% by the year 2050. For both of these methods of expressing projected cost rates, a doubling of the proportion of the potential revenue source that may be necessary in order to meet social insurance costs is projected to occur by the year 2050. The fact that projected costs expressed as a percentage of GNP (GDP) are so much lower than when expressed as percentage of earnings suggests the possibility of providing more financing from sources other than payroll taxes in the future.

But these costs for social insurance benefits represent only a part of the whole picture of the burden of providing for the personal consumption expenditures of persons who are not employed or are earning too little to cover their personal consumption expenditures (PCE). Additional sources of income to cover PCE for such individuals include withdrawals from private pension accumulations and from personal savings and investments. Because the aged dependency ratio is projected to approximately double between 1987 and 2050 for both countries, and the prevalence of vested pensions is rising, and the total amount of PCE for persons who cannot cover these expenditures with current earnings will more than double as a percent of GNP (GDP) by 2050, This observation leaves us with a question that I will attempt to address: How will we pay for these higher costs and how will paying these higher costs affect the economy?

SOCIAL INSURANCE COSTS
One possible way to meet the higher social insurance costs in the future would be to simply raise payroll taxes. The argument that is often given in support of raising future payroll tax rates as necessary for current-cost financing is that, even after allowing for this increased burden on workers, after-tax, or disposable earnings are projected to rise faster than prices between now and 2050 (i.e., the purchasing power of earnings would still increase). However, the general level of average earnings increases before payroll taxes are deducted. The slower rate of increase in the disposable income of workers than for those not currently working may be a significant handicap to this approach.

This leads to another possible approach, one that might avoid the rapid rise in payroll tax rates implied by the current-cost financing approach when the baby boom generation retires. Partial advance funding (in anticipation of the years when the baby boom generation reaches retirement age) can be accomplished by

simply maintaining higher-than-currently-necessary tax rates for some time prior to the high-cost period. Such partial advance funding is already implicitly scheduled in the law for the OASDI program.

But for a program as large as OASDI, with surpluses invested with the federal government, the true burden of future costs cannot be substantially reduced by advance funding. The goods and services that will be purchased with future social insurance benefit payments cannot be stored and saved. Moreover, given the current, and likely future, debt status of the U.S. government, any advance taxes paid to the social insurance programs will probably not even truly be saved. The federal government will need to collect taxes (or borrow) on a current basis in order to pay the benefits when they are due.

However, the incidence and equity of the tax burden in the future can be altered by partial advance funding. If redemption of trust fund assets is accomplished by raising taxes that impact on all persons, not just on workers, then the relative increase in the burden on workers of having only payroll tax rates rise would be reduced or eliminated.

However, if the taxes that are raised are personal or corporate income taxes, then much of the extra cost will be borne by domestic businesses as increased operating costs. To the extent that foreign competitors experience the same increase in operating costs due to their own baby boom retirees, this will not be a comparative problem. But to the extent that foreign competitors experience less increase in operating costs, or simply have lower income taxes due to lower military spending, for example, then they gain a comparative advantage in marketing their products.

A very advantageous way (from the point of view of improving trade balances) to meet the excess cost of the retirement of the baby boom generation, and for that matter, excess defense costs, etc., would be through a value-added tax, sometimes referred to as a national sales tax. This approach would help domestic production to be price competitive with foreign production, both in home markets and abroad.

The primary disadvantage of the value-added tax is its relatively regressive nature. Actually it is a flat tax on consumption expenditures, but lower income people tend to spend a higher proportion of their income on current consumption. However, a value-added tax may be no more regressive than a likely alternative for nations with relatively high revenue needs: periodic devaluations of the currency (such as that experienced recently in the U.S.). Currency devaluations also serve to raise prices to the consumer, are just as regressive as the value-added tax, and do not even result in any direct increase in tax revenue.

SOCIAL INSURANCE FINANCING BEYOND THE BABY BOOM GENERATION
The projected increases in social insurance costs are not solely the result of the baby boom generation. Costs are not projected to decline significantly after 2050 and may be expected to begin rising again later. Why? Largely because of declining mortality rates -- increasing life expectancy.

To the extent that social insurance costs rise due to increased life expectancy, it can be argued that they should be met by increased payroll taxes. If the excess costs due to the baby boom bulge is to be met by more broadly based taxes, then necessary payroll tax increases beginning around 2030, to meet the

cost of increased life expectancy, will leave payroll taxes for OASDI and HI very near normal cost rates for then current workers. The primary alternative to increased taxes is to lower costs by either increasing the normal retirement age or diminishing benefit levels and/or eligibility in some other way.

INCREASED SALES OF PRIVATE ASSETS

Accumulation of pension plan assets and personal savings and investment represent, to a great extent, advance funding by individuals for future income needs. As with federal spending, any net disinvestment must be met by revenue from a current source at the time of disinvestment. If, when the baby boom generation reaches retirement age, assets of pension plans, banks, and stockholders are offered for sale in large quantity, there will have to be a corresponding demand, or the price of assets will fall -- we may currently be overvaluing the assets of the baby boom generation. Because demand will be related to the number of current workers, the baby bust years since 1970 suggest that asset values may indeed fall, or least rise more slowly in real terms when the baby boom generation reaches retirement age. At the same time, the increasing ratio of demand for consumer goods and services to the number of working-age producers will tend to make prices of goods and services rise faster.

With reduced asset values and faster consumer price increases, the baby boom generation will likely find itself with lower-than-expected real retirement income from sources other than social insurance. This situation will tend to encourage later retirement -- regardless of what is done for social insurance programs. The good news is twofold: First, with natural economic forces pushing the baby boom generation toward later retirement, there may be less resistance to increased normal and minimum retirement ages for the social insurance programs. Second, the further retirement is deferred, the less asset values will drop and prices of goods and services will accelerate, as the baby boom generation reaches old age.