RECORD OF SOCIETY OF ACTUARIES
1984 VOL. 10 NO. 3

INVESTMENT IMPLICATIONS OF AN AGING POPULATION

Moderator: DAVID S. WILLIAMS. Panelists: ROBERT L. BROWN, A. HAEWORTH ROBERTSON, JAMES R. SWENSON. Recorder: BARRY S. HALPERN

1. To what extent is the projected growth of the retired population relative to the working population likely to affect the national savings rate?

2. What will be the effect upon the capital market and the prospects for economic growth?

3. What threats and opportunities does this present for the life insurance industry?

MR. DAVID S. WILLIAMS: All of these gentlemen on the panel have been involved extensively in various aspects of this topic, and are consequently more qualified than I to moderate this session. However, since they are all authorities in this area, and have therefore journeyed far into the realm of economics, you should not be surprised if they disagree with one another on a number of points. Consequently, I have come prepared, if necessary, to be not only a moderator, but also a referee.

The subjects we are concerned with today - the national savings rate, the capital markets, economic growth - are obviously of fundamental importance. They are also enormously complex, involving as they do a multitude of inter-related factors of uncertain dimensions. We will be looking at some of these today, and it will be evident that the topic involves a fundamental and fascinating relationship between actuarial science and economics, deserving of far more attention from our profession than it currently receives. Our panelists are going to stimulate your interest in this direction, and give you some guideposts for further consideration.

To begin, Rob Brown will paint a picture of the demographic background, and sketch in some of the major features of the related economic landscape.

MR. ROBERT L. BROWN: On my way into New York for this meeting, our plane was unexpectedly caught in a violent thunderstorm and was actually hit by lightning. After a period of silence, the pilot came on the intercom and announced, "I have some good news and some bad news".

"The bad news is that as a result of being hit by lightning we have lost all our navigational aids, we have lost all contact with the ground, and we have lost our computerized backup system. In short, we are lost."

"The good news is that as a result of the tail winds created by the thunderstorm, we are making extremely good time."

That little story may have a message for some of you present this morning. We are now heading full speed ahead into the twenty-first century. But do we really know where we are going?

This morning we want to spend a few minutes looking at the demographic topography in the hopes of creating more accurate maps for our travels.

Table 1 shows Dependency Ratios for Canada from 1901 to 2071. Ratios for the U.S. are almost the same.

TABLE 1

DEPENDENCY RATIOS FOR CANADA, 1901–71; PROJECTIONS, 1976–2071

Year	As Percentage of Population Aged 18–64		
	Population Aged 65+	Population Aged 0–17	Total Dependency
1901	9.3%	74.9%	84.2%
1911	8.2	68.2	76.4
1921	8.7	72.6	81.3
1931	9.8	66.6	76.4
1941	11.2	56.5	67.7
1951	13.5	60.8	74.3
1961	14.3	72.8	87.1
1971	14.4	63.4	77.8
1976	14.4%	52.8%	67.2%
1981	14.8	44.9	59.7
1986	15.4	41.6	57.0
1991	16.7	41.1	57.8
1996	17.4	40.3	57.7
2001	17.5	37.6	55.1
2011	18.7	33.9	52.6
2021	25.0	34.6	59.6
2031	31.7	35.0	66.7
2041	30.3	34.4	64.7
2051	30.6	34.7	65.3
2061	31.0	34.6	65.6
2071	30.6	34.7	65.3

In the first column we have the ratio of those aged 65 and over to those aged 18 to 64. We can see that this ratio has been increasing consistently from 1911 to now, and will continue to increase in the future.

On the other hand, we see that the youth dependency ratio--the ratio of those aged 0 to 17, to those aged 18 to 64 -- is presently at an all time low, but is expected to go even lower still.

This reflects the "greying of America". That is, our population is aging, and that aging process is going to have significant ramifications as we shall see later in this session.

But if we look more closely at the aged dependency ratios, another interesting aspect reveals itself.

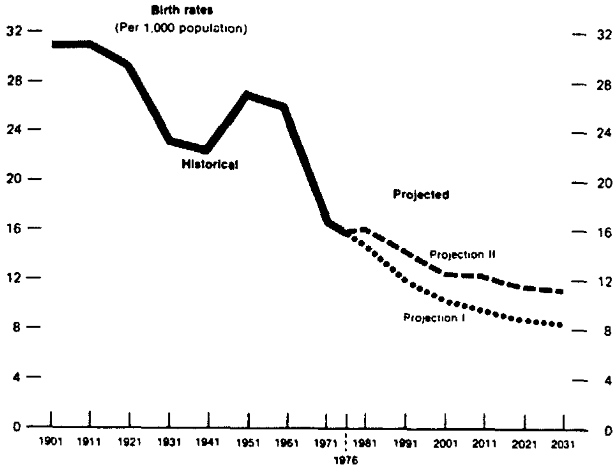
Early in the twentieth century there were twelve people aged 18 to 64 (potential workers) for every person aged 65 and over (a potential aged dependent).

Now we have seven potential workers for each aged dependent. This slowly and gradually drops to six-to-one by the year 2011. Then something rather phenomenal happens. Between the year 2011 and 2031 our aged dependency ratio jumps from 18.7% to 31.7%, an almost doubling of the aged dependency burden in only twenty years. These happen to be Canadian statistics, but U.S. statistics would present a very similar profile. Obviously something more startling is happening than just a continuation of the aging population process. Of course, we know that the answer is the Baby Boom.

Most of us describe this demographic phenomenon as the "Post War Baby Boom". This immediately conjures up images of thousands of frisky soldiers returning from World War II and immediately setting in motion a birth explosion.

The following graph seems to support this theory.

Birth Rates, 1901 to 1981



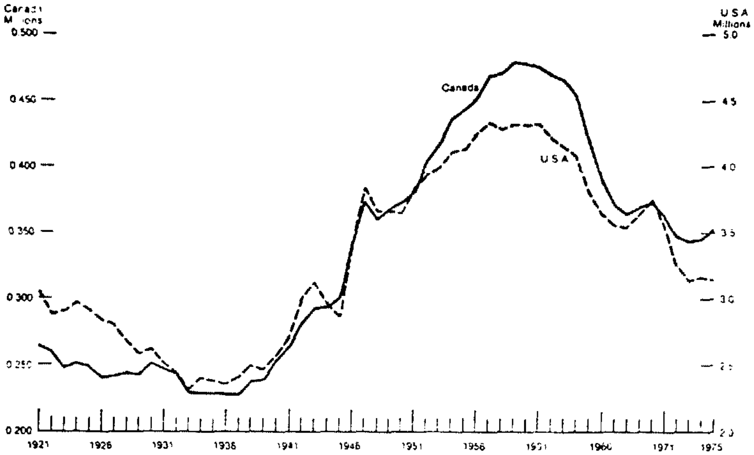
This graph shows Canadian Birth Rates from 1901 to 1981 defined as number of live births per 1,000 of population. It illustrates that birth rates had been dropping from the beginning of this century and had taken a serious drop during the depression. It then shows a rise in birth rates during the war with a peak in 1947. Finally it gives evidence of the eventual Baby Bust of the 1970's.

This graph seems to suggest that the phrase "Post War Baby Boom" is extremely accurate.

However, we are not academic demographers (at least you aren't). We are interested in demand units or consumption units, and not birth rates. We are interested in how many people are going to need pensions, and how many are going to be on the OASDI rolls. We want to know when these people will be cashing in their assets.

The following graph shows the Baby Boom from quite a different perspective. The number of live births for Canada and the United States are shown separately.

Live births in Canada and the U.S.A., 1921 to 1975



This graph shows that the North American Baby Boom really went from 1952 to 1966 with a convenient peak at its mid-point in 1959. This may seem to be a subtle point, but to me it's very important. If you use the phrase "Post War Baby Boom", then you immediately think of the Baby Boomers as being part of the 1945 cohort, and I say they aren't! I see many references in the popular press to "The Baby Boomers are now ages 30 to 39". No, they're not! They're now aged 18 to 32, which is very important if you're going to understand the timing of the ramifications. It means that these Baby Boomers will start to retire (assuming age 65 remains a normal retirement age) starting in 2017. This explains why our aged dependency ratios take such a jump between 2011 and 2031 (note by 2031 all the Baby Boomers will be aged 65 or over).

The Baby Boom Tidal Wave (so called because the boom was followed by a baby bust) has already had many far-reaching effects. For example, during the sixties, millions of dollars were spent building new schools that are now underutilized.

The Baby Boom Tidal Wave also goes a long way towards explaining the stagflation of the 1970's.

The Baby Boomers started to enter the job market in the late sixties and early seventies. That would have created serious labor supply problems in itself, but what really added fuel to the fire was a coincidental dramatic increase in female labor force participation rates which jumped from 38.3% in 1970 to 50.3% in 1980 (percentage of those aged 15 to 65 in the labor force).

As a result, in the decade of the 1970's, North America faced the fastest growing labor force in the industrialized world. While our labor forces (both Canada and the U.S.) were growing 2.7% per annum, Japan's was growing 1% per annum and the labor forces of France and the United Kingdom were actually shrinking.

Employment growth was healthy, but still unemployment rates rose. In fact, the high unemployment rates of the past decade were inevitable given the underlying demographics.

Unfortunately, not realizing this inevitability, our governments reacted to the rising rates of unemployment in the early 1970's in a misguided Keynesian manner by expanding the money supply and increasing government deficits. Keynes' theory is a demand side theory which states: "When there is not enough demand in the economy, and hence a recession sets in, the government should artificially prime the demand pump by printing money". Unfortunately, this theory has been misunderstood to read: "When there is unemployment, governments should prime the demand pump by printing money". This was done in the early 1970's.

What was not realized was that the cause of unemployment was NOT lack of consumer demand, but rather an oversupply of labor. No priming of the demand pump could have lowered unemployment since it was not a demand-side problem. By attempting to fire up an already active economy, all the government succeeded in doing was create the second half of stagflation: namely, inflation.

In 1977, our governments changed to monetarist theories; interest rates soared, and the economy died. We were forced through the worst depression since the 1930's. While rates of inflation have dropped, real interest rates remain at all time highs. Why?

There are several reasons.

Many cite government deficits. Others say that as long as future rates of inflation are unpredictable, lenders will require a significant premium in their interest rates for the inflation risk. Still others blame our tax system.

I say the most important factor in today's high real rates of return is the Baby Boom Tidal Wave.

Remember, the Baby Boomers are now aged 18 to 32. What are they doing? They're buying homes, cars, refrigerators, televisions, etc. How are they acquiring these assets? They're going into debt! So you have this tightly spaced 15 year age group in its higher debt phase, which is one very important reason why real interest rates are so high. Hence, I see no reason to anticipate any significant drop in real rates of return in the near future, at least not until the Baby Boomers are beyond this stage of life.

I started by showing you a table of dependency ratios that showed rising aged dependency ratios and falling youth dependency ratios. I want to look at those figures again but in a slightly different form. Again my figures are based on Canadian data, but, again, U.S. data would show remarkably similar ratios.

TABLE 2

PROJECTED DEPENDENCY RATIOS RELATIVE TO 1976

	1976	1981	1991	2001	2011	2021	2031
1. Relative crude dependency ratios:							
Total	1.00	0.89	0.86	0.82	0.78	0.89	0.99
Aged	1.00	1.03	1.16	1.22	1.30	1.74	2.20
2. Relative effective* dependency ratios:							
a) Equal growth:							
Total	1.00	0.98	1.02	1.01	1.02	1.20	1.43
Aged	1.00	1.14	1.40	1.48	1.59	2.11	2.72
b) 1% growth differential:							
Total	1.00	0.94	0.89	0.82	0.78	0.86	0.96
Aged	1.00	1.08	1.23	1.23	1.24	1.56	1.85

* Assuming 1.8 fertility rate and net immigration of 100,000.

Table 2 shows projected dependency ratios relative to a base year of 1976. It shows that the aged dependency ratio will rise slowly between now and the year 2011 and then jump to a point more than double today's burden by the year 2031. That is, in the next fifty years, the aged dependency burden will more than double.

At the same time, the table projects total dependency ratios (aged plus youth) and shows that they will never be as high in the future as they were in 1976. They actually go down for a while and then come back to .99 in the year 2031.

Many economists have suggested that because the total dependency ratio will be lower in the next century than it is now, all that is required is a shift of resources from the young to the old. All you have to do is cut back on the salaries of those university professors and put the money into extended and chronic care. Unfortunately, it is not going to work quite that easily.

The same study from which this table is taken showed that per capita government-sector expenditures for the aged were 2.5 times per capita expenditures for the young. Table 2 illustrates the effect of this weighting by constructing what are called relative <u>effective</u> dependency ratios (these are calculated giving a weight of 2.5 for each aged dependent and 1 for each young dependent). The total effective dependency ratio rises consistently in the future to a point almost 50% above where it is today. Hence, even with a drop in youth dependency, the total social burden is expected to rise by 50% in the next 50 years. This is a more accurate measure of the cost of our aging population. Finally, the study shows that if support costs grow at a rate 1% lower than the growth in per capita income, we can support these dependency ratios with no larger a slice of the Gross National Product pie than is being consumed today. What the study does not show and where I think one should have real concern, however, is if support costs rise more rapidly than per capita income as has been the case for the past five years.

My presentation this morning has been rather gloomy - so let me try to end on a positive note. My final table (Table 3) shows the number of persons in the labor force per non-working person aged 65 and over in ten industrialized countries.

We see that Canada now has 5.2 workers per aged dependent while the United States has 4.7 workers per aged dependent. We know that, by 2031, both countries will have fewer than three workers per aged dependent. We know that the aged dependency burden is expected to double.

TABLE 3

NUMBER OF PERSONS IN LABOR FORCE PER NONWORKING PERSON AGED 65 AND OVER, IN TEN INDUSTRIALIZED COUNTRIES, 1950–2000

Year	Austria	Belgium	France	Germany	Japan	Netherlands	Sweden	United Kingdom	United States	Canada
1950	5.76	3.97	5.12	5.75	13.23	5.97	5.19	5.02	6.79	6.0
1955	4.95	3.68	4.63	5.39	12.68	5.05	4.65	4.64	5.87	5.7
1960	4.31	3.38	4.23	4.92	12.23	4.37	4.11	4.41	5.25	5.8
1965	3.59	3.12	3.82	4.21	11.72	4.14	3.87	4.31	5.05	5.6
1970	3.10	2.90	3.43	3.60	10.59	3.90	3.52	3.92	4.96	5.7
1975	2.96	2.78	3.36	3.40	9.26	3.76	3.19	3.68	4.86	5.5
1980	2.99	2.76	3.38	3.37	8.08	3.69	2.98	3.54	4.79	5.3
1985	3.46	3.05	3.84	3.87	7.39	3.70	2.92	3.62	4.68	5.2
1990	3.42	2.90	3.64	3.78	6.61	3.57	2.91	3.62	4.55	4.8
2000	3.51	2.76	3.45	3.38	5.02	3.45	3.34	3.98	4.83	4.8

But take a closer look at Table 3. It shows that Austria, Belgium, and Sweden are already experiencing ratios where there are fewer than three workers per aged dependent. These countries may not be the healthiest economically in the world, but they are surviving, and they are far from being bankrupt.

The point I am trying to make here is that we have some time to adjust to these new realities - about 30 years, in fact. So with some wise planning and some loud voices of concern from people like you, we can pass a future on to our children that will be bearable.

MR. WILLIAMS: Thank you, Rob, for a most effective presentation. You have aptly demonstrated the truth of Paul Samuelson's remark: "You cannot understand the economics or the politics of today without understanding the impact of the Baby Boom". One such impact involves a twist of irony: the state and local governments ran up budget surpluses last year exceeding 60 billion dollars in aggregate. One of the major contributing factors was the relative decrease in education system expenditures, a logical development in the wake of the so-called "Baby Bust".

In Canada, on the other hand, provincial and local governments ran substantial deficits. Why the difference? It's due in part, of course, to the slower recovery of the Canadian economy, but an important compounding factor is that the savings in educational expenditures were more than offset by increases in the provincial governments' shares of the cost of Canada's universal medical care programs, which are preponderantly for the benefit of senior citizens.

We Canadians are justly proud of our national medicare plan, under which our physical health is improving almost as rapidly as our fiscal health is worsening.

At any rate, it is clear that our national economies are both being profoundly affected by the changing demographics at either end of the age spectrum, and that this will be the case for several decades to come.

I think it is fair to say that the primary focus of concern over anticipated changes in demographics has been with regard to the impact on the Social Security program. Jim Swenson has spoken authoritatively on this subject many times, and he intends today to provide us with a fresh look at the system from the perspective of today's topic.

MR. JAMES R. SWENSON: Rob Brown has provided informative background regarding the demographic developments similarly affecting Canada and the U.S. I fully agree that the Post World War II "Baby Boom" and subsequent "Baby Bust" have enormous implications for our countries. Today, I plan to discuss the implications of those demographic developments from the perspective of fiscal and national retirement income policies.

Before doing so, a few visual perspectives of the demographic developments may help bring some of the statistical data into better focus. Rob has referred to the Baby Boom as a Tidal Wave. U.S. Congressman Barber Conable referred to it as a "pig going through a python". You should find it very thought-provoking to visualize that when the Baby Boom generation reaches current retirement ages, the percentage of population over age 65 in the entire U.S. will significantly exceed the percentage of those over age 65 living in Florida today.

This latter fact emphasizes the need for appropriate long-term planning by both our legislators and the general public. Thus far, U.S. fiscal policy has been more heavily influenced by short-term political pressures than by long-term planning considerations. In addition, the U.S. general public has been much more heavily consumption-oriented than the general publics of other major industrialized countries, including Canada. These are causes for concern that must be addressed if we are to successfully meet the demographic challenge.

Rob stated that our governments had employed Keynesian economic theories in a misguided manner. I agree with that assessment. Our policymakers never gave Lord Keynes' theories a fighting chance.

As I'm sure you are aware, Keynesian economics was to have been a double-edged sword. Unfortunately, the political process would not permit both sides of the sword to be used. Therefore, we have used deficits as a "fix" to whatever real or perceived economic problems confronted us. We now find ourselves to be economic "junkies" requiring ever-increasing dosages of deficits to achieve the desired economic effects. We must break this habit, but it's going to be painful. Everyone must share the responsibility.

Our total federal debt now stands at $1.5 trillion, and it's growing rapidly. This official debt only tells a small part of the story, however. The major federal retirement programs all have huge unfunded liabilities because they have essentially operated on a pay-as-you-go basis.

There are three major federal retirement programs: (1) The Civil Service Retirement System covering federal civilian workers; (2) The Military Retirement System covering members of the military; and (3) The Social Security Program now covering most U.S. workers.

The Civil Service Retirement System and the Military Retirement System each has an unfunded accrued liability of $1/2 trillion. As indicated, the programs have been funded on essentially a pay-as-you-go basis. While there is a $100 billion fund for the Civil Service plan, it is invested in government debt. That's like having no fund at all because government debt merely represents a promise to be paid by future taxpayers.

Previous generations of taxpayers did not pay their fair share of costs as services were rendered. It was expedient to "promise now, pay later". Unless changes are made, costs will rise as the programs mature and these unfunded liabilities will become the legacies of future generations in the same manner as the federal debt.

The same analysis applies to the Social Security Program. There are several ways to determine the unfunded liability of that program. For an excellent treatment of this subject, I refer you to Haeworth Robertson's book, "The Coming Revolution in Social Security". For current participants, the unfunded liability of the Social Security Program, including Medicare's Hospital Insurance Program, was estimated at $5.6 trillion following the 1983 amendments.

Therefore, our federal retirement programs, including Medicare, have a total unfunded accrued liability of $6.7 trillion, more than four times the official federal debt. This is not the kind of legacy we should be leaving to today's children, particularly when you consider demographics. Remember, today's children are the "Baby Bust" generation. There are relatively fewer of them and they will be expected to provide some level of support to the enormous "Baby Boom" generation.

Let's now focus our attention on demographics and national retirement income policies. What are the implications of demographics? What actions should be taken to meet the demographic challenges?

It was politically expedient to fund Social Security on a pay-as-you-go basis. It was argued that benefit promises need not be secured by advance funding, since the government has the power to tax those in the labor force to meet benefit obligations.

While I appreciate the argument, I submit that benefit security should be a significant concern, particularly in view of demographics. I further submit that benefit security is not the only significant issue. Of equal, if not greater, importance is the effect that retirement income financing has on the economy.

Let's first examine the benefit security issue. Since Social Security is an intergenerational transfer program, benefit security depends on the willingness of the public, as represented by their legislators, to pay taxes sufficient to support benefit promises.

As the program matures, the willingness of the public to pay higher levels of Social Security taxes will be thoroughly tested. Demographics, combined with ever-increasing health care costs, will strain the capacity and willingness of workers to provide sufficient taxes to support legislated benefits. As a nation, we are already unwilling to pay taxes sufficient to meet the total fiscal obligations of the federal government. One of the major reasons for this fact is the ever-increasing share of taxes needed to support the non-needs-tested entitlement programs, such as Social Security, as those programs begin to mature. Approximately one-half of all federal taxes are now required to support those entitlement program expenditures. That's an enormous portion.

The public has been very willing to support the Social Security program because it served an important role in our society. Indeed it serves a critical role in any industrialized society. In addition, during the expansion years, before the program began to mature, it was a real bargain for virtually everyone of voting age. It was enormously popular. However, now the program is beginning to mature. The days of the free lunch (or at least, a heavily subsidized lunch) will be coming to an end. Social Security is no longer the great bargain it once was. There will be an ever-increasing proportion of people who will not receive their "moneysworth" from the program, particularly as the demographic tidal wave ages. While I do not personally believe a social insurance program should be required to give everyone their "moneysworth", the popularity of the program will likely diminish and benefit security could become an issue.

We have already seen that our legislators are willing to reduce benefits currently being paid. In the 1983 Social Security amendments, up to one-half the benefits were subjected to income taxation for higher income recipients. This constitutes a real benefit reduction.

This occurred even before the program reached maturity. There are now 3.2 workers supporting each beneficiary. Once the Baby Boom generation has retired, only 2.0 workers are expected to support each beneficiary. Total OASDHI program costs are now approximately 14% of payroll. After the Baby Boom generation retires, these costs are projected to exceed 24% of payroll, based on 1984 intermediate assumptions.

This projection is based on the very optimistic assumption that health care cost increases are miraculously controlled, despite the enormous pressures the aging of the Baby Boom generation will place on the health care delivery system.

This cost projection is deceptively low because it reflects the cost shift resulting from the 1983 amendments. Because of those amendments, the Medicare program will pay an ever-decreasing share of the full price of the services it purchases. This means that private patients will pay more than the full share of their prices, an indirect form of taxation. Furthermore, the official long-term cost projections ignore the cost of the other part of Medicare, the SMI program, where costs equal to 5% of payroll are expected.

When both parts of Medicare are considered, total Social Security costs are projected at about 30% of payroll once the Baby Boom retires. Other programs designed to assist the elderly will also be experiencing high costs at that time. Benefit security should be a serious concern. As a representative of the Baby Boom generations, and as a father, I think it is neither fair nor realistic to expect my children to pay the level of taxes required to support current benefit promises.

As indicated earlier, benefit security is not the only significant issue involving retirement income financing. The effect such financing has on the economy is of equal, if not greater, importance. In fact, the effect on the economy is of paramount importance since a strong, growing economy is the best way to assure benefit security.

If the economy would benefit by an increase in savings and capital formation, advance-funded retirement income programs are preferable to pay-as-you-go financed programs. Whether the economy would benefit from advance-funded programs depends on the relationship between the rate of return on capital and the rate of growth of aggregate earnings. If the former exceeds the latter, advance-funded systems are preferable.

This condition exists in both the U.S. and Canada. That is, the economies could benefit from an increase in savings and capital formation. There would be an immediate cost through a temporary reduction in consumption as savings are accumulated, but both economies would ultimately enjoy improved long-term economic productivity.

Looking at demographics, the labor supply will not grow as rapidly as it has during the past couple of decades because the Baby Boom generation is now almost completely of working age. When the Baby Boomers retire, labor shortages are expected. Therefore, these demographic developments mean that we should be expanding our capital stock to improve productivity.

This is an optimum time to expand savings and capital stock. The Baby Boom generation is largely in the labor force. Women are in the labor force in unprecedented numbers and the youth dependency ratio is low. By increasing our capital stock now, we can compensate for the slower and ultimately negative growth in the supply of labor.

Despite this golden opportunity, our consumption-oriented society has not increased saving. As indicated previously, the U.S. Federal Government is a huge negative saver. Federal debt is absorbing an ever-larger share of available private savings.

This tells only part of the story. We have also permitted huge unfunded liabilities to accumulate within the various federal retirement programs. Furthermore, we are leaving an infrastructure of deteriorating roads, bridges, and waterworks. Fiscal policies must be changed.

Individual saving in the U.S. also leaves much to be desired. As a percentage of disposable income, individual saving in the U.S. has fallen from 8.5% in 1973 to 5.8% in 1983. Fortunately, the level of individual saving should increase as the Baby Boom generation ages. That generation is now in the consumption phase of their lives.

However, it is worth noting that individual saving in Canada increased from 9.5% in 1973 to 13.3% in 1983. This occurred despite the fact that our demographics are almost identical.

To place the modest rate of U.S. savings in perspective, it should be noted that West Germany and France, like Canada, had savings rates more than twice the U.S. rate. Furthermore, Japan's rate was more than three times our rate. This has helped fuel that country's tremendous economic growth. U.S. tax policies have tended to encourage borrowing and consumption while discouraging savings. For example, we permit unlimited tax deductions for interest paid on loans. We also have the lowest total taxes on purchases among major industrialized countries. Many of those countries have value-added taxes. Finally, the U.S. has very few incentives to save. The universal IRA has been a positive step in the right direction and early results are promising. However, the amounts that can be set aside in these IRA's are significantly smaller than the amounts permitted under similar arrangements in Canada.

The need for increased U.S. saving should be self-evident. Let's now examine the effect that retirement income programs have on savings and capital formation.

Economists have hotly debated whether Social Security has reduced total U.S. saving. Chief U.S. Economic Advisor, Martin Feldstein, has long contended that Social Security has reduced U.S. saving. Individuals reduce their rate of saving because of their "Social Security wealth". They do not need as much personal savings for their retirement. He refers to this as the "substitution effect" and has conducted time series analyses which indicate that saving is reduced by approximately 50¢ for each dollar of "Social Security wealth". Since Social Security is merely a transfer program, this reduces aggregate savings.

Other economists have contended that Social Security does not reduce individual savings. They claim that Social Security makes retirement an attainable objective. Consequently, people are encouraged to save to enjoy a long and secure retirement. This is termed the "induced retirement effect". Another argument used by economists who claim that Social Security does not adversely affect savings is that it merely formalizes intergenerational transfers already taking place.

I've read the works of about 15 economists on this subject and have seen 15 different answers. Economist Henry Aaron of the Brookings Institute summed it up quite succinctly when he stated, "Despite much computer based huffing and puffing, there is no conclusive evidence on the effect Social Security has on saving".

Despite this lack of conclusive evidence involving Social Security, there is general agreement that private pension plans, being advance-funded, do significantly contribute to net total saving. While there is the expected disagreement about the degree of additional saving created, the fact that they do contribute significant amounts of desperately needed capital is of great significance when considering our demographics. Increases in capital stock will provide economic productivity and will help enable the "Baby Bust" generation to produce needed goods and services.

President Carter's Commission on Pension Policy examined this issue carefully. The Commission authorized a study to determine the effect that Social Security and private pensions had on saving. That study concluded that Social Security had no significant negative effect. They also found that advance-funded private pensions added net savings of 90¢ for every dollar of assets accumulated on behalf of pension programs.

This is one of the major reasons they concluded that our nation had become too dependent on the pay-as-you-go Social Security program. They recommended an increased reliance on advance-funded programs.

The logical question is, if advance-funded programs offer such superior advantages, why couldn't Social Security become advance-funded? In fact, on paper, and ignoring pending Medicare problems, fairly sizeable OASDI trust funds are now projected to accumulate beginning at the end of this decade. Ultimately, the trust funds are projected to equal approximately four years' worth of benefit payouts.

However, this is essentially a bookkeeping entry, a mirage, since the trust funds are invested in government debt, a promise to be met by future taxes. If the remainder of the federal government were to operate in a balanced position, there would be no debt. The trust funds would then have to be invested in private initiative which would indeed add to net capital stock. However, investment in private initiative of any significant amounts would present enormous problems of control and responsibility. The magnitude of the investment could be overwhelming, in the $5 to $6 trillion range if currently fully funded. In a free market society, I'm not sure these problems could be overcome.

Furthermore, to the extent that early generations selected pay-as-you-go financing, they have received and are receiving tremendous windfall gains. If we were now to move toward advance-funding, some generations would be required to pay twice: once for their parents; once for themselves.

Therefore, the logical conclusion is to gradually reduce our nation's dependence on Social Security by encouraging the expansion of advance-funded private pension plans and individual savings. Future benefit promises for Social Security must be scaled back to affordable levels recognizing not only demographic realities but pending Medicare problems.

There is sufficient time and numerous ways to accomplish these objectives. However, action should be taken promptly so that those who would be affected would have adequate advance notice for personal and financial planning.

This would permit gradual changes rather than precipitous changes that could emerge from an intergenerational conflict if action were delayed until the "Baby Boom" generation reached retirement age.

The steps taken in the 1983 Amendments were modest steps in the right direction. The gradual increase in the retirement age to 67 began to recognize long-term fiscal realities. However, the action seems puny when you realize that by that time, people aged 75 are expected to have the same life expectancy as someone age 65 when that age was originally used to determine benefit eligibility.

Our nation must also restore fiscal control. Deficits must be reduced and eliminated. Our economic recovery and long-term economic viability are at stake. Considering demographics, this is the period of time when the federal government should be reducing the accumulated debt rather than adding unprecedented amounts to it daily.

These desperately needed actions will require bi-partisan cooperation. This is not a time for politics as usual. The Bi-partisan Budget Appeal, headed by Peter Peterson and several former Secretaries of the Treasury, established a credible and thoughtful plan for action on the federal budget.

As actuaries, you have a unique ability to analyze and interpret the long-term financial consequences of the issues we are discussing today. Decisive and intelligent action is needed, and I strongly urge you to take an active role in these important matters.

MR. WILLIAMS: Thank you, Jim, for putting the Social Security system in perspective in a most compelling manner. Though I'm wondering if anything with a 6.7 trillion dollar price tag can possibly be placed in perspective!

As Frank Cappiello indicated yesterday, Wall Street is having trouble digesting the current level of government deficits, most of which is created because of the need to pay interest on the "official" 1.5 trillion dollar national debt. If benefit security ever comes to be perceived as a real concern, the consequences could be grave indeed.

I'm glad Mr. Cappiello's outlook was basically up-beat, because after having read "The Coming Revolution in Social Security", I'm not sure that Haeworth is going to give us grounds for unalloyed optimism! But he usually gives us good ideas to think about, and more importantly, some worthwhile things we can do.

MR. A. HAEWORTH ROBERTSON: In describing the topic to be addressed by this panel, the preliminary program suggested that the projected growth in the retired population relative to the working population may cause the national savings rate to decline; the program then posed the question of how such a decline might affect the capital market and alter the prospects for future economic growth.

It is not at all obvious to me that the national savings rate will decline, at least during the next 50 years, as the population ages. On the contrary, it might increase. There are a number of factors we can identify that will probably influence the national savings rate; there are other factors, however, that we cannot now identify, or understand, that will also affect the national savings rate. I shall comment briefly on some of these factors (excluding the ones we cannot now identify and including some of the factors I do not understand completely).

First, why are we interested in the rate of national savings? Whether the national savings rate rises or falls is significant for several reasons. It has a direct effect on the amount of capital available for future economic growth. It is a reflection of the collective psyche of the nation's citizens, an indication of the extent to which individuals rely upon themselves or the government (i.e., other taxpayers) for economic security, particularly in retirement. It is an indication of the likelihood that the nation's long-range retirement benefit promises and hopes will be fulfilled. And, of course, the national savings rate is an important factor in the viability of institutions that facilitate the accumulation, management, and eventual distribution of those savings: banks, *trust companies, savings and loan associations, and credit unions, to name* just a few. Oh yes, the national savings rate has an important influence on the financial health of the life insurance and annuity industry, including its sales agents, attorneys, and accountants -- perhaps even its actuaries.

In putting this program together, we on the panel asked ourselves, "To what extent are trends and events of the past 35 years useful for delineating the next 35 years?". I believe that an extrapolation of past trends about aging, work, and retirement would be of limited value in making statements about the future. On the other hand, a look at the rapidly changing conditions of the past 35 years should give us a strong indication that the next 35 years may be even more eventful (and perhaps less predictable) than were the past 35 years.

It is true that people are living longer and that the proportion of people over age 65 to people between ages 20 and 65 will be larger in the future than it was in the past. But this fact does not have an obvious effect on the national savings rate. If people continue to retire at 65 (approximately), they will need to accumulate larger sums for retirement than did their forebears since they will have a longer remaining lifetime at 65. If people retire later than age 65, at age 70 for example, then the proportion of people over age 70 is what we should be concerned with, not the proportion over age 65. It is possible that the proportion of persons over age "r" to people between ages 20 and "r" will not change materially, but rather that "r" will change. Social Security has already increased "r" for persons born after 1937; further increases seem inevitable. I, for one, believe that lifespans will be extended so much in the next 50 years that it is ridiculous for today's youth to think of retiring at age 65 or even age 70.

Medical costs for the retired population have increased steadily and dramatically in the past. Medical costs comprise a significant part of a retired person's budget. These medical costs must be provided by an increasing life annuity with a large final payment during the last year of life. To the extent the individual provides for this "medical-care annuity", he must save a very large sum by the time of retirement - a sum that will probably be larger for tomorrow's retirees than today's retirees, even in constant dollars.

To the extent the government meets these retirement needs (for a cash annuity as well as a medical-care annuity) through a pay-as-you-go program and not through an advance-funded program, the national savings rate will be affected differently than if an employee or an employer provides for the retirement needs. An individual must provide for his retirement needs by advance-funding (unless he relies upon an extended family). An employer can provide for an individual's retirement needs on either a pay-as-you-go basis or an advance-funded basis (although, obviously, advance-funding provides more assurance that benefits will in fact be provided).

In the future, employees may provide for an increasing portion of their needs at the older ages by working part time, thus affecting the amount of savings traditionally thought necessary for retirement. This seems quite likely as the high cost of retirement at relatively young ages becomes more obvious, particularly during periods of significant inflation. If we act prudently as a nation, we will begin to create an environment in which the capabilities of each individual can be utilized effectively throughout life in a series of endeavors compatible with one's changing physical and mental abilities - an environment that fosters meaningful activity, not empty idleness. Government policies will be directed toward these goals and not toward the removal from the active work force of able-bodied persons who must then be supported by the remaining active workers.

In the future, employer retirement plans may satisfy less of an employee's retirement needs than they do now. This could result if there is widespread replacement of defined benefit plans with defined contribution plans. It could result from more burdensome federal legislation that discourages the expansion (or even the continuation) of employer-provided retirement benefits, particularly for employees at the higher end of the salary scale. It could result from a prolonged period of high inflation.

Increased participation in the labor force by women could have a marked effect on the accumulation of savings for retirement. A working wife could lessen the need for a husband to save for retirement. A working wife could generate significant extra savings for retirement purposes. A woman who is trained and accustomed to working is a woman with less need for survivor's benefits, which are otherwise provided through some form of capital accumulation. On the other hand, women's life expectancy is significantly longer than men's, and the provision of adequate retirement income for the increasing number of older women living alone will be one of the big challenges of the next century.

Amendments to the Social Security system during the past seven years have curtailed benefits and increased the need for individuals (and/or their employers) to assume more responsibility for their retirement needs. The 1977 amendments reduced retirement benefits at age 65 for future retirees by approximately 10 percent. The 1983 amendments increased the full-benefit retirement age for persons born after 1937. They also made an effective reduction in benefits by taxing one-half of the Social Security benefits of single persons with retirement incomes of more than $25,000 and married couples with retirement incomes of more than $32,000. This provision affects only about 15 percent of the retired Social Security beneficiaries in 1984, but, as inflation occurs, it will affect an ever-increasing percentage unless these income limits (which are static under present law) are increased.

Quite apart from actual voids created by Social Security benefit reductions, the erosion of public confidence in the institution of Social Security is an important factor in the amount of responsibility an individual personally assumes in providing for his retirement needs. The attitudes and perceptions of a nation's residents, individually and collectively, may be a more important indicator of their future behavior than past events and apparent trends. The Heritage Foundation in Washington, D.C. has just released a study of IRA's conducted by Sindlinger & Company, Inc., which includes the following interesting findings.

> For the relatively short period of time they have been available to all working people, Individual Retirement Accounts (IRA) have proven to be a well-received form of saving among adults aged 20 years and over.
>
> So far, some 34 million adults have started their own IRA's and slightly more, some 36.5 million, plan to take one out within the near future, according to the survey. Thus, just over three out of every four working Americans aged 20 or over either has or plans to open an IRA.
>
> The study found widespread support for increasing the amount which may be deposited within an IRA tax-free. Among all adults 20 years or older, a projected 120 million, or 77.6% of the adult population, agree that the ceilings of $2,000 on employed persons and $250 on non-gainfully employed spouses should be raised.
>
> Some 90.9% of those interviewed with IRA's said they felt more secure about retirement as a result of their IRA's. And, among all adults, 83.3% felt that they would receive a better return on their investment through IRA's than through Social Security.
>
> As far as the success of IRA's was concerned, 83.5% of all interviewed said that IRA's were successful, 15.2% said they had no opinion, and a scant 1.4% said that IRA's were not a success.
>
> Among those who have opened an IRA, we found the highest concentration to be among the 35-44 year olds, with 40.4% of those in this age group responding that they had opened one. IRA's were in the weakest concentration among those 65 and older, with 7.5% saying they had one, and the 20-24 year olds, among whom 7.4% had started saving for their retirement through an IRA.
>
> Nearly three quarters of those interviewed believe Social Security should give annual statements.

If we take the findings of this survey at face value, we might conclude that individuals are beginning to take more responsibility for saving for their own retirement, and they are beginning to look askance at further expansion of government programs of individual economic security.

This public attitude may be the result of a loss of confidence in the Social Security system, and the federal government in general. If this confidence is restored (and every effort will be made to restore it), the Social Security system might resume its growth of the past fifty years and negate the need for individual responsibility and saving for retirement, at least among the bulk of the population. And since a government-sponsored social insurance program is almost certain to be a pay-as-you-go program, capital accumulation and economic development would suffer, as would all institutions that serve the cause of individual saving for retirement. But confidence is a relative matter. It is entirely possible that the level of confidence in Social Security and the federal government will remain low, but that confidence will become even lower in

- the ability of an individual to save for his own retirement (because of inflation, unsatisfactory investment vehicles, further erosion of the "personal savings ethic," etc.) and

- the ability (or willingness) of employers to provide significant retirement benefits (because of the substitution of defined contribution plans for defined benefit plans, termination of retirement plans as the result of unduly restrictive legislation or for other reasons, failure to provide "medical-care annuities", failure to adjust pensions - including deferred vested pensions - for cost-of-living increases, etc.).

If such untoward events happen, or are perceived to be in the offing, the government will step in to fill the void by taking one of two actions:

- social insurance will be expanded, or
- employers will be required to provide certain minimum benefits.

Each of these actions would have a different effect on national savings, the national psyche, and ultimately the social and economic course of the nation. It seems to me likely that a combination of these two general actions will occur and that the present emphasis on individual responsibility and de-emphasis on government intervention is too good to be true - that it is only a temporary lull in the storm of government attempts to determine what is best for us and then force us to have it, whether or not it is rational, affordable, or in the best long-range interest of each of us as individuals and the nation as a whole.

Professor Brown tried to end his presentation on a positive note by assuring us that it would be 30 years before the United States and Canada had worker/dependent ratios equal to those that already exist in Austria, Belgium, and Sweden. He tried to assure us further by stating that "these countries may not be the healthiest economically in the world, but they are surviving, and they are far from being bankrupt". I, for one, do not find these statements to be reassuring in the least. I am not prepared to "adjust to the new realities" Professor Brown speaks of, especially if it means that we are merely "surviving, and...being far from bankrupt".

I believe we can change these projected "realities". I believe we can prevent the inactive portion of the population from growing more rapidly than the active population. I believe we can prevent the elderly population from becoming an unbearable burden on the working population. I believe that innovative actuaries and innovative institutions (including life insurance companies) can play an important, vital role in helping the public plan for and achieve a financially secure retirement - if we have the foresight and courage to do so.

If you are interested in obtaining a copy of the IRA report I discussed, call Maureen Harp at the Heritage Foundation in Washington, 202-546-4400. They will send you a free copy.

MR. WILLIAMS: Thanks, Haeworth, for a thought-provoking address - and for sounding a professional call to arms. The qualities required are essential ones - foresight (for without it, you won't go about it the right way) - and courage (for without this, you won't be heard).

Look at the problem Martin Feldstein has had in trying to put forward his point of view - the affair has been somewhat dramatically described as "Dr. Doom and the self-fulfilling prophecy"! But when the Administration press secretary Speakes, (excuse the pun) he has a point worth considering. That is, some widely respected economists have a wide following, and if enough people accept and act upon their economic assessments, then such assessments can take on the appearance of a self-fulfilling prophecy. F.D.R. said it in a different context, "The only thing we have to fear is fear itself".

The key point is that the economy cannot be captured by a mass of statistics and trends, no matter how extensive. It also relies for its continued well-being on the confidence of the people. But this can change quickly and profoundly, triggered by normally minor events, the proverbial straws which can break the camel's back. And who can tell in advance how close to that critical point the economic camel is?

Has anyone a satisfactory explanation for the immediate cause of the 1929 crash? In 1928 the economy was forging ahead, but in 1930 it was in dire straits and still contracting. Why? The same physical plant and natural resources were still there. The same human resources were available. What had happened was that people's perceptions had changed, to such an extent that the national will was effectively paralyzed.

Could it happen again? Not in the same way, of course, because the government is so heavily involved, but the ultimate result could be just as devastating.

And the perception of the value of Old Age Security could change in a similar way if the situation is not gradually defused as the system matures.

One concept I'd like to draw to your attention is the <u>life cycle theory of saving</u>. This concept is a well-researched branch of economic theory, holding that the average consumer borrows, or "dissaves", in his early adult years, saves at an increasing rate in his middle years and eventually returns to a dissaving mode in his retirement years. Recently, this profile has been questioned on both theoretical and empirical grounds. Evidence has been emerging that the elderly remain net average savers far into their retirement years; a number of incentives for them to save are postulated.

If this more recent evidence is indeed valid, then the prognosis for the trend in the national savings rate to the year 2000 is greatly improved, because over this period of time the age 45-64 bracket covering the years of peak savings is expected to grow by 34%, as compared with a growth rate for the age 65+ group of 22% and an overall population growth rate of merely 12% (according to the U.S. Bureau of Statistics).

After the year 2000 the demographics really turn against us, so that it is vitally important during the intervening time to take advantage of the favorable underlying conditions, and put our economic house in order.

MR. RICHARD E. McELRATH*: My question has to do with the anticipated increase in savings and how that would be invested. I suppose ideally if we could somehow make a huge capital investment at about the point in time when the baby boom retires, it would then make the rest of the people capable of producing all the extra goods and services and then that would self-destruct when the baby boom dies. That would be an ideal situation. I am interested in how people who have thought about this view the increased investments that will be necessary in the period leading up to about 2010 or 2020.

MR. BROWN: I'm not sure that I would characterize this as an investment outlook per se. In fact, I talked to several of our investment folks realizing that I was going to be speaking about this subject and to be quite honest they really hadn't given much long-term thought to this particular issue. I would point out that, very clearly, pension funds invest from a very long-term perspective. I think that that's not true of all forms of savings. It's true that IRA savings also can be invested in long forms of saving which seem to lead particularly well towards long-term plant and equipment type investment. As far as individual industries or things of that nature, we really have not given thought to that. I think that investment in housing, even though it's not improving productivity, is a form of capital investment that does sustain itself for some period of time, though. And the U.S., fortunately in that one area, probably has done a better job of investment than most other countries. But as far as answering the question specifically, other than to state that it could be invested in long-term capital which has a long-term life during the period of the baby boom's dependency, I think that pensions and IRA's are ideally suited.

MR. WILLIAMS: I could also just mention that some other industries will be adversely affected. As far as apparel manufacturers are concerned, as the baby boomers age, the bottom is going to fall out of the jeans industry. The brewing industry, which has been long supported by the under 45 group, is going to be flat. On the other hand, the pharmaceutical and related industries are almost certain to benefit as the population ages.

MR. ROBERTSON: Let me just make a quick comment. It's also a non-answer to your question about how the money is going to be invested if we save it. I think its probably a little idealistic to assume that we might select investments in such a way that we will improve the productivity of the country so that we can have money working instead of people working. I think its going to come down to selecting investments in such a way that we attract savings and make people want to save. I think that's going to be

* MR. McELRATH, not a member of the Society, is Vice President of Metropolitan Life Insurance Company.

the determinant of how we invest the money as well as what kinds of investments are available.

MR. SWENSON: I'd like to make one further observation on the investment issue. I think its possible for government to invest in long-term capital projects that are going to help finance the baby boom generation during its retirement years. The infrastructure that I mentioned during my talk, the deteriorating roads, bridges, and waterworks, are all issues that I think we really should be addressing when those baby boomers are in the labor force.

MR. DAVID NELSON: How much of the solution to the problem of taking care of baby boom people when they reach retirement is increasing the retirement age and changing the definition of who is the dependent person? Also, how far does that age have to go to make a real significant contribution?

MR. BROWN: Here's the answer for Canada. If we don't change the age of eligibility for social security benefits, we go from six workers per aged dependents to fewer than three workers for aged dependents. A shift in the age of entitlement for government benefits which goes up by three months each year starting in 2007 until we go from age 65 to age 70 in 2027 would mean we would never have fewer than five workers per aged dependent. You already have put in place in the United States amendments to increase the age of entitlement. I don't have similar figures but they can be found, at least the preliminary figures can be found, in the President's Commission's Report on Pensions. I'd like to stress one point here. I'm not saying that people can't retire at age 65. All I'm saying is that the age of entitlement to government-funded benefits would shift. You can retire whenever you want, but you're going to have to support yourself a little bit longer before you get your government-sponsored benefits.

MR. ROBERTSON: Professor Brown illustrates that the dependency ratios for the aged have increased in the past and will continue to increase in the future, while the dependency ratios for the young have decreased in the past and will continue to decrease in the future. The total dependency ratio has generally decreased and is expected to continue to do so.

Two points, although obvious, should be made. First, for every child, there is usually an adult who is clearly responsible for supporting such child. There is not always a readily identifiable person who is responsible for supporting an elderly adult. Second, the cost of supporting an aged adult is considerably more than the somewhat marginal cost of supporting a child. Professor Brown states that "per capita government-sector expenditures for the aged were 2.5 times the per capita expenditures for the young". When we are considering the allocation of national resources, our concern should be with "all expenditures", not just "government-sector expenditures".

When we are considering the effect of an aging population on the amount of saving that must be done for retirement purposes, we are concerned with the aged dependency ratio, not the youth dependency ratio. And the aged dependency ratio will double in the next 50 years according to the projections in Professor Brown's presentation. These figures apply to Canada, as he states.

In the United States, the figures follow a similar, but perhaps more distressing pattern. According to the latest Trustees' Report*, the aged dependency ratio will increase from .20 in 1985 to .39 in 2035 (the ratio of those 65 and over to those between ages 20 and 64), based upon the Alternative II assumptions as to fertility rates. This assumes the fertility rate will increase from its 1983 level of 1.86 to 2.00 in 2010, and remain level thereafter. It seems to me more likely that fertility rates will continue their historic decline, rather than that they will increase.

The same U.S. Trustees' Report indicates that if the fertility rates decline from 1.86 to 1.60 by 2010 and remain level thereafter (the Alternative III assumptions), the aged dependency rate will increase from .20 in 1985 to .50 in 2035 and .63 in 2060.

Professor Brown suggests that if "support costs" grow at a rate one percent less than the growth in per capita income we can support these rising dependency ratios without undue strain. This conclusion assumes, however, that we can effect a significant shift of resources from the young to the old and, as Professor Brown states, "Unfortunately, it is not that easy". Furthermore, the conclusion assumes that the aged dependency ratio simply doubles and that it does not treble. Finally, Professor Brown's statement that other countries now have the same ratio of workers to nonworkers that the U.S. and Canada will have in 30 years is not reassuring. It takes more than a low worker/non-worker ratio to make an attractive social-economic environment. Would any of us willingly trade our state of economic development for that of any of the other countries listed in Table 3?

A one line answer to the initial question is how much of the long range solution lies in higher retirement ages for the younger population. My view is 90 or 95% of the solution lies in higher retirement ages.

MR. SWENSON: I think, incidentally, it is also possible, while retaining somewhat the same general eligibility age for benefits, to gradually reduce the benefit levels, which in effect is what a retirement age increase is doing. It should be recognized that the way the benefit program is currently structured is that benefits in terms of real purchasing power are projected to grow. It's possible to just moderate the growth rate of those benefits and to significantly reduce the future cost of the program. In fact, Bill Hsiao, who is an actuary, and also a Professor of Economics at Harvard, headed the panel several years ago that recommended that rather than wage-indexing the benefits before retirement, they should be price-indexed. If that were done, it would have very significant implications. Now the net result would be that rather than the replacement rate being in the 40 to 45% range for the average worker, it could very well be in the 20 to 25% range. Then the issue becomes how much additional pension do you have? How much private pension? How much IRA savings? What are

*1984 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds
it is entirely possible that "support costs" will grow as fast or faster than other costs and workers will have to sacrifice all of their future productivity gains to support the rising aged dependency costs-not a very attractive future to contemplate, except for the elderly.

your other forms of savings? I think a whole combination of factors is going to be involved in solving this particular problem.

MR. BROWN: It becomes very difficult very quickly to predict the parameters underlying these projections. Mr. Robertson has suggested that the fertility rate might continue a long term decline. There's another relatively widely accepted theory called the "Easterlin Hypothesis" that says that a cohort that has a really rough time (for example, the Baby Boom cohort has trouble getting into school, has trouble buying a home, has so much competition that they find life pretty difficult), will have a small number of children. But a cohort that has a relatively easy time, like the cohort that came out of the depression years and met with the economics of the fifties and had easy promotions and easy economic times, will have a large number of children. The Easterlin Hypothesis says that fertility rates will go through a wave with a two generation period. So he suggested that we're predictably in this bottom part now and another generation from now may go back up as the small cohort of the baby bust finds the economic times and promotions and getting into school relatively easy. Who knows?

MR. MICHAEL COWELL: I'd like to first add a note of thanks to the panel. I think they've given us some excellent food for thought here. Haeworth came up with a term that I hadn't heard before but I find it very useful. That's the "medical care annuity". I think there's a facet to the discussion this morning that's been alluded to but not been developed fully. I realize that the context here is financial security, but I think that one of the problems of aging is not only to get people to accept financial responsibility for their retirement. I also think we're going to have to get people to take a greater responsibility for their own health. Just as Uncle Sam and the Canadian government is going to have less willingness and less ability to take care of everybody at age 65 for current income needs, I also think there's going to be less willingness on the part of government which is, after all, the people, to take care of people to provide this huge medical care annuity that gobbles up about 50% of our medical care costs in the last year of life. I think that an increasing sense of responsibility for one's own health is going to have to go hand-in-hand with what I perceive to be an emerging responsibility that people are taking for their own financial security. I speak as a member of the Baby Bust; that is, the one before the last Baby Boom, having reached a stage in my career where I am now closer to normal retirement age than I am to the age when I started my career. I think these things are beginning to mean something personally and I think they have great significance for the nation as a whole, for the two nations, for the whole western world.

MR. WILLIAMS: Thank you very much. I think your point is well taken and I think that that is one of the things that goes hand-in-hand with taking greater responsibility for your retirement because then you're looking at it from a "balance sheet" point of view how much your retirement is going to cost you as well as the funds you're going to have available. Of course, how well you are is in great measure going to dictate how much it's going to cost you. How well you are also determines how much you're going to enjoy retirement, meaning you don't have to be a frisky soldier to still be able to kick up your heels a little bit during retirement years. Of course, this is the thing that we see advertisers already starting to promote. As the baby boom ages, we're going to see advertisers and consumer products manufacturers gearing their ads to that huge cohort that represents their major market.

BIBLIOGRAPHY

AARON, HENRY J. (1982). "Economic Effects of Social Security". Washington, D.C. Brookings Institution.

ASIMAKOPULOS, A. (1980). The Nature of Public Pension Plans: Intergenerational Equity, Funding, and Saving. The Economic Council of Canada.

BOYLE, PHELIM P. and RUTH FREEDMAN. (1984). Population Waves and Fertility Fluctuations: Social Security Implications. To appear.

BROWN, ROBERT L. (1983). Actuarial Aspects of the Changing Canadian Demographic Profile. Transactions of the Society of Actuaries, Vol. XXXIV

CALVERT, G.N. (1977). Pension and Survival. Financial Post Books.

EASTERLIN, R.A. (1961). "The American Baby Boom in Historical Perspective," American Economic Review, 51, 869-911.

EASTERLIN, R.A. (1978). "What will 1984 be like? Socio-economic implications of recent twists in age structure," Demography, 15, pp. 397-432.

ECONOMIC COUNCIL OF CANADA. (1979). One in Three - Pensions for Canadians to 2030.

FOOT, D.K. (1982). Canada's Population Outlook. Demographic Future and Economic Challenges. Canadian Institute for Economic Policy.

FOOT, DAVID K. and DANIEL TREFLER. (1983). "Life-Cycle Saving and Population Aging."

KEYFITZ, NATHAN. (1983). Statement to the Senate Committee on Finance: Subcommittee on Savings, Pensions & Investment Policy.

KEYFITZ, NATHAN (1984). Current Cost Pension Systems and Intergenerational Equity. To appear.

KORCZYK, SOPHIE M. "Retirement Income Opportunities in an Aging America: Pensions and the Economy." Employee Benefit Research Institute. Washington, D.C.

LEE, R.D. (1974). "The Formal Dynamics of Controlled Populations and the Echo, the Boom and the Bust," Demography, Vol. 11, No. 4, pp. 563-585.

ONTARIO TREASURY STUDIES 16. (1979). Issues in Pension Policy. Ministry of Treasury and Economics.

ROBERTSON, A. Haeworth. (1981). The Coming Revolution in Social Security. McLean, VA: Security Press.

RUSSELL, LOUISE. (1982). "The Baby Boom Generation and the Economy." Washington, D.C.: Brookings Institute.

SMITH, D.P. (1981a). "The Problem of Persistence in Economic - Demographic Cycles," Theoretical Population Biology, 19, pp. 125-146.

SMITH, D.P. (1981b). "A Reconsideration of Easterlin Cycles," Population Studies, Vol. 35, No. 2, pp. 247-264.

THOMPSON, LAWRENCE H. (1983). "The Social Security Reform Debate". Journal of Economic Literature, Vol. XXI.

U.S. CONGRESS. HOUSE COMMITTEE ON WAYS & MEANS. "1983 Annual Report - Federal Old-Age & Survivors Insurance and Disability Insurance Trust Fund". House Doc. 98-74, 98th Congress, 1st session, June, 1983c.