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**SOCIAL SECURITY PROGRAMS IN  
CANADA AND THE UNITED STATES**

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*As the baby boom generation gets closer to retirement age, the financial well-being of the Social Security system has been the concern of many people in both the U.S. and Canada. The often-asked question is: "Will there be Social Security for me when I retire?"*

*The session is intended to address the critical issues of the financing of the Social Security systems. The funding process and the current funded status of the Social Security systems in the U.S. and Canada are explained. Various measures of the funded status are reviewed, and the short- and long-range forecast of the financial positions of the system will be examined.*

*Some alternatives to the funding process and benefit provisions will be explored and the impact of these on the financial security of the participants will be analyzed.*

MR. MICHAEL M. C. SZE: I am from the U.S., but I currently reside in Canada. With me today are two professors. Professor Brown is from the University of Waterloo. He is a past president of the Canadian Institute of Actuaries (CIA). He is the author of many books and articles. His famous article on PAYGO funding stability and intergenerational equity of cost won an international award. He is the award winner of the biannual contest, SCOR, in 1994, which many of you have probably read about. He is also a member of the Task Force on Social Security Financing and a member of the Task Force on Retirement Savings and Health Care Financing. You have probably seen most of these task force reports. The report on health care financing should be ready and available in November 1995. We are fortunate to have him talk about international social security and its application to Canada.

Professor Howard Young is from the University of Michigan. Again, he has written many articles on Social Security. He is the chairperson of the U.S. Social Security administration technical panel on Social Security. The report of the Social Security technical panel is due out in a couple months. Professor Young is also a member of the National Academy on Social Insurance and a member of the Pension Research Council. He is here to talk about Social Security theory in general as well as the report of the technical panel of the advisory council to the Social Security administration in the U.S. He will also discuss the funded situation of U.S. Social Security.

I'll start the session with an outline of issues involved and leave the more difficult part to the two professors. I will give an overview of the Social Security programs in the U.S. and Canada. The technicalities and details of the programs in the two countries might be different, but if you look at the programs you'll see many similarities.

If you look at the financial difficulties of the two systems, you will see strong resemblances. The reasons behind the problems are common, and the solutions that are

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available are quite similar. Howard Young will elaborate on those points regarding the program in the U.S., and Robert Brown will talk about the program in Canada.

First of all an overview. I will briefly go over the Social Security laws, the funding method, the problems, the causes of the problems, and the proposed solutions by various people. If you analyze the two systems, you will find many similarities. It is very apt for us to have a joint session on the U.S. and Canadian Social Security systems to see how closely related the two countries are in terms of the economic structures, including the structures of the Social Security systems.

Let's look at the Social Security system of Canada. We basically have two tiers of benefits in Canada: the Old Age Security (OAS) and the guaranteed income supplement (GIS), which are basically floor-level benefits. Then the Quebec Pension Plan (QPP) and the Canada Pension Plan (CPP) make up the other piece of benefit. The first piece (the OAS and the GIS) is not earnings-related; the second piece (the C/QPP) is earnings-related.

In the U.S. we have just the OASDI program. We are not going into the topic of Medicare. That will be the subject of other studies.

The OAS and the GIS are paid from general revenue. The C/QPP is financed by taxes on earnings below the yearly maximum pensionable earnings (YMPE) and above the 10% average wage. The current Social Security tax rate is very low, with each employer and employee each contributing 2.6% of pay.

Funding for the OASDI is based on taxable earnings. Right now the tax rate is substantially higher than OAS/GIS, with employers and employees each contributing 6.2%. The funding structure is basically pay-as-you-go. There's a small reserve, but that reserve is very small compared with the outgo.

The OASDI is experiencing some financial problems. If you have read the OASDI trustee reports, you have seen that every year there is concern that the OASDI trust fund will run out of money by the year 2029, and that year has not changed in a number of reports. In Canada any funding deficit may be supported by general revenue, but this cannot continue forever. The Canadian experts are saying that to cover the Social Security payments, there should be a gradual tax increase in the order of 6.6% by the year 2050. So there is quite a problem.

Both the U.S. and Canadian systems have some problems. The problem originates from using a pay-as-you-go-type funding system. One generation is asked to pay for the retirement benefit of the generation before it. It's well and good if a bigger working population supports the smaller population above. But as you know, because of the baby boom and baby bust generations, the growth of the supporting workforce in both the U.S. and Canada is not increasing as fast as the number of people who will be receiving benefits. Furthermore, the people who will be receiving benefits are living longer and longer.

As a result, in both Canada and the U.S., the dependency ratio is increasing. In 1994 in Canada, for instance, about five persons supported one. In about 2050, two-and-a-half persons will support each person. In the U.S., there is a similar situation. About

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five persons are supporting one at the moment. Later on there will be fewer than three persons supporting one. Therefore, the tax burden will become bigger and bigger. It is only logical that we actuaries take on the responsibility of trying to help solve that problem.

What are the proposals being considered right now? Well, there are similar proposals in the U.S. and Canada. We have the heavily publicized Kerry Simpson proposal report now, for example. But if you set aside all the details and look at the basis of the proposals, you will see the following alternatives: either lengthen the deferral period, increase the tax rate, or let the cost increase happen as it is required. If you take the last approach, then according to alternative two scenario of OASDI, you will not need to increase the tax rate until 2010. But thereafter it will escalate very fast. Both employers and employees will have to contribute approximately 8.8% per year until the year 2050. But, of course, a more sensible thing to do is to start planning now. If you start planning now, the solutions will be easier, there will be more alternatives, and the impact will be less.

An alternative solution being proposed is to defer the retirement age to 69. But if you think about it, there's no way to avoid deferring it further to age 70 or beyond. And that is true for the U.S. and Canada. Another alternative is to raise the tax rate right now. According to the proposal in the U.S., if we start raising the tax rate in 2000, the tax rate increase will be very mild, probably less than 1.2% for each employer and employee. Other proposals that are being considered right now are some combination of the two above. Professor Brown will give a talk about Canada, and you will see that in Canada, as in the U.S., the alternatives are quite similar. There is much in common between the two systems, and we can benefit and learn from each other. With this I give you Professor Brown.

MR. ROBERT L. BROWN: We're going to talk about matters that you've read so much about, and you probably assume there's nothing new. My challenge is to try to say something new to you about these issues. We're going to talk about population aging. We're going to talk about the baby boom and the baby bust cycle.

Certainly we know that life expectancy in North America has improved dramatically this century. With our population living longer and longer, people are questioning their ability to afford a pay-as-you-go Social Security system. But the life expectancy is not the most important factor. The most important factor is captured in Table 1.

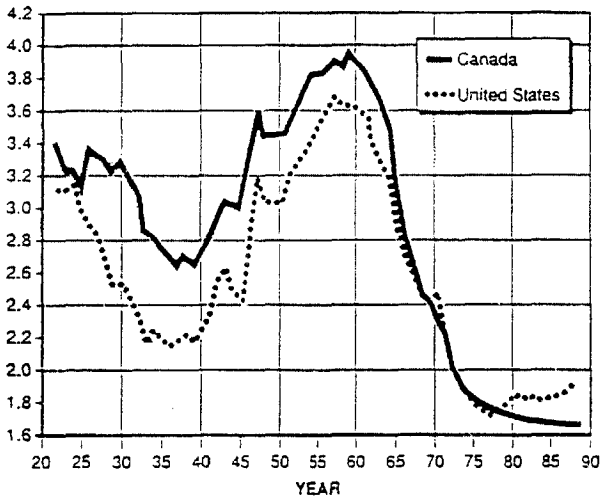
TABLE 1  
LIFE EXPECTANCY IN CANADA

Year	At birth		At age 65		At age 75	
	Male	Female	Male	Female	Male	Female
1921	58.8	60.6	13.0	13.6	7.6	8.0
1941	63.0	66.3	12.8	14.1	7.5	8.2
1961	68.4	74.2	13.5	16.1	8.2	9.5
1981	71.9	79.0	14.6	18.9	9.0	11.9
1986	73.0	79.7	14.9	19.1	9.1	11.9

Source: Statistics Canada

Chart 1 shows the total fertility rates for Canada and the U.S. in this century. I'd like to point out a couple things. First, if I had been given an assignment back in the 1930s to determine the fertility rate in 1995, I probably would have looked at what had happened to that point from the beginning of the century. And then with some sort of a time series extrapolation, I would have made a very good projected estimate of the 1995 fertility rate. The only problem is, of course, I would have been dead wrong for all the intervening years.

CHART 1  
TOTAL FERTILITY RATES  
1922-88



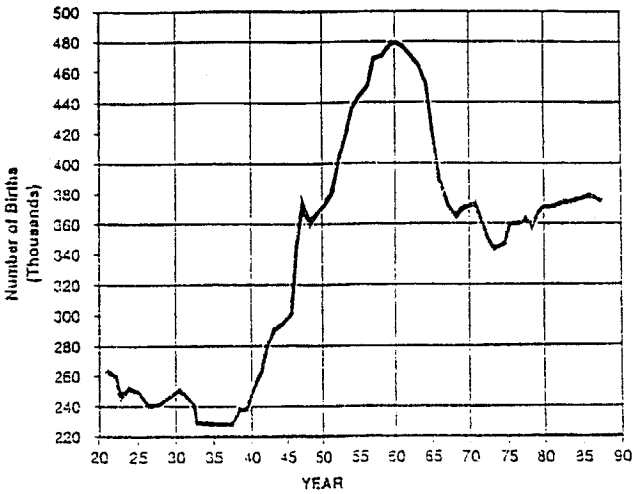
But the fertility rate we have today is not the surprise. It is, in fact, very much in the nature of the long-run trend over several centuries in all, developed nations. A decrease in mortality is followed by a decrease in fertility. Its a classical proposition. What is of interest is what happened in the intervening years. Notice that Canada, during this period, in terms of fertility had a higher peak and a lower trough than the United States. I say that it is not just in baseball where Canada is number one. I don't spend too much time on in-depth analyses of fertility, because as an actuary I'm more worried about how many people will demand retirement income security. How many consumer units and producing units will there be?

So I'll switch gears. Chart 2 shows the number of Canadian live births since the turn of the century. The U.S. does not look remarkably different. For those people who keep hearing the phrase *postwar baby boom*, let me tell you that this is the phenomenon that you're studying. Isn't that fascinating?

The postwar baby boom took place between 1952 and 1966. Conveniently it had its peak in 1959. The largest number of live births was right in the center of that 15-year period of time.

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CHART 2  
CANADIAN LIVE BIRTHS  
(IN THOUSANDS)



The United States does not show much difference between 1951 and 1965; the largest number of live births occurred in 1957. So this is what I'm interested in. The baby boom was followed by the baby bust, and this is a tidal wave with all the forces of destruction of a tidal wave.

Chart 3 is the Canadian population in the form of a histogram. We call these population pyramids because in a stationary or stable population they are pyramids: broad at the bottom working their way through survivorship to a peak at the top. Well, of course, this is starting to look a little bit different than a pyramid. The top shows the Canadian population in 1986; males on the left, females on the right. You can see quite clearly the baby boom followed by the baby bust.

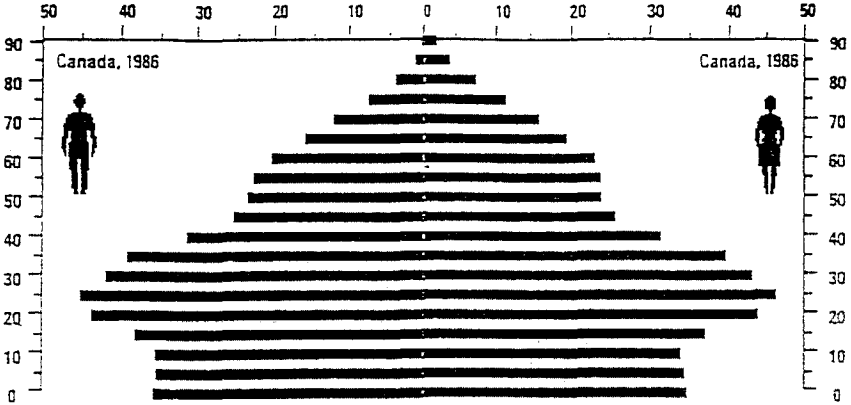
Five years later in 1991 we have the census. All that has happened is that the baby boomers are five years older. This is from Statistics Canada.

The baby boom is followed by the baby bust. This demographic phenomenon is pushing its way through the age profile like a python swallowing a pig. But what is important with a pay-as-you-go system is reflected in what we'll look like in 2031. This is not a population pyramid. This is a pregnant cylinder. We're talking about a huge difference here. If you look at the top of Chart 3, the large baby boom population is supporting the small depression cohort. We have the large baby boom population now in the labor force, supporting in retirement the small depression cohort. So we have extremely good demographic ratios right now. These are the good times.

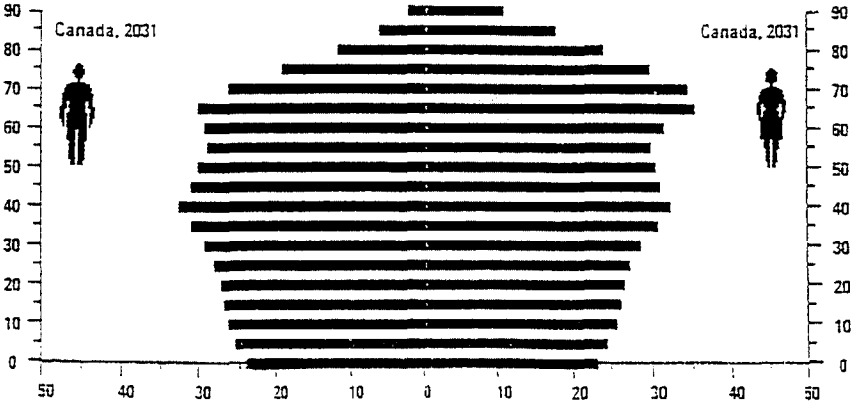
But when we get to 2031, the baby boomers are retired and are being supported by the baby bust generation. And, in fact, this bottom projection was done in 1986 and it predicted the echo from the boom, the ripple from the wave. It has not happened very

dramatically, so this is more of a straight line down these two sides than what was expected 10 years ago.

CHART 3  
ACTUAL AGE STRUCTURE—CANADA 1986



PROJECTED AGE STRUCTURE—CANADA 2031



So the interesting question then is how are we going to fund these transfer systems when these demographics change? The Canada pension plan was read into legislation and became effective January 1, 1966. The guaranteed income supplement in Canada became effective in 1966. Those plans were designed assuming that the demographics of the previous 20 years would continue. The baby boom ended in 1966.

Remember I told you that Canada had a higher peak and a lower trough than the United States? Well, in fact, we had a higher peak and a lower trough than just about anybody in the Western industrialized world. India, China, and Hong Kong will have

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the most rapidly aging populations in the world, but they have not promised their citizens huge retirement income security programs. So the country that has the most interesting dilemma in the world happens to be Canada. We're going to have a 135% increase in the number of people aged 65 and over. The U.S. will have a 105% increase. Countries such as the U.K. and Sweden (if they have systems that politically they are finding affordable today), do not have much of a transition. So it's not just how much you're paying, it's how rapidly it will change that makes these things difficult politically.

Now there's another aspect to this baby boom/baby bust cycle. There are two parts to the baby boom. The surfers were out in front of the wave and caught the wave. And I'm one of those. Normally I don't call myself a baby boomer because I was born in 1949. But I'm a surfer. When I went to college, it was easy to get in. When I graduated there were many jobs. I bought a house when houses were still cheap and mortgage rates were low. And while I'm at a university and not getting promoted, all the people who were in my graduating class went out into industry and have been promoted beyond anything that their capabilities would have justified.

But look at the people who were born after the wave hit the beach. Look at the people who came along when there were only the remains of the driftwood. When they went to college, the entrance requirement shot up into the mid-80th percentile to get in. When they entered the labor force, there was a 25% youth unemployment rate. When they went to buy a house it was already too late; the baby boomers had pushed up prices, and they were paying three and four times what I paid for the same housing. Mortgage rates in Canada in 1983 were 22%. Now they're being told they may not get their Social Security.

But here's how young people are feeling right now. We have piled promises onto their backs based on what we are paying to today's generation and the immediate future generations in terms of universal health care and old age security. And then if they say, "I'm not too sure if I can handle all this," we say, "What are you whining about?"

The me generation. Well, the me generation has every right to whine. They have not had it very good. And we tend to have forgotten about them. And yet we're depending on an intergenerational promise to fund our system.

As Mike pointed out, there are three sources of retirement income security: government-based, private pension plans, and individual savings. But I'm going to add a fourth one. I think in the future you're going to hear more and more speakers add a fourth bullet. And that's work earnings.

Let me go back to those junior baby boomers who bought the house too late. My parents received a huge windfall just as they were going to retire because the baby boomers pushed the price of real estate upward. And I have a good windfall because I bought housing before the baby boomers came along. I'm one of those surfers. But people buying a house today cannot look for it to be their retirement nest egg. In fact, given the realities of the demographics, if they all tried to sell their single-family detached homes at the same time, they could end up having egg on their face. Also, they will have to provide for a longer period of retirement than any generation before. They're also getting into the labor force late, often underemployed even after they're

employed. Finally, they will not be promoted as rapidly as the baby boomers or the presurf baby boomers. So for all these reasons and because of the uncertainties of Social Security, I think we have to legitimately start to talk about public policies that include work earnings.

The government systems in Canada and in the United States do redistribute wealth. Poorer people get more from the government systems. In fact, very poor people can have more take-home pay the first day of retirement than they did the last day of work. As you become wealthier, the government replacement ratio becomes smaller and smaller in both Canada and the United States. For someone who earns the average industrial wage, the government systems replace 40% of that average industrial wage at the time of retirement. As you become wealthier, the percentage gets smaller and smaller. You have to turn to other sources of income after retirement. What concern is the Canadian public putting forth about the future of the government-funded system? Well, this is the crux of the matter. For the first 20 years of the Canada pension plan, only 1.8% was contributed from workers, and 1.8% was contributed from employers. Because of the pay-as-you-go nature and the baby-boom-versus-depression cohort, we were able to fund the Canada pension plan for 20 years with those very low rates. We even built up a bit of a side fund for contingencies.

Rates are now rising. Workers and employers contribute 2.7%. The provinces have already agreed that they will be raised to two times 5.05, which brings them to 10.1. But the 15th actuarial report just published shows that it is virtually inevitable that those rates will have to rise to 14.2%. This is a huge change.

Now workers in Europe are paying 14.2% today. But Canadians think that their own benefits are worth 3.6%. It is hard to convince them that they are worth 14.2%, especially when they see articles, such as one taken from a very popular journal in Canada showing that all people who came in early received a huge actuarial windfall from their pay-as-you-go system. For people being born now, it's questionable whether this system will break even for them at all. Keeping this intergenerational promise may, actuarially, be a losing proposition for them.

Chart 4 shows how many Canadians believe they will get their Social Security. The histogram to the far right says that 85% of people who are 65 and older have faith in Canadian Social Security. But only 23% of younger people believe that they will get their now promised Social Security.

Many of the criticisms leveled at pay-as-you-go systems can, in fact, be turned back and directed to private systems. The aging of the workforce will also increase the costs of defined-benefit pension plans as they are now being accounted for in Canada and the U.S. As the whole workforce ages, everybody gets closer to retirement. Chart 5, based on U.S. data, shows the liquidation that would take place in the private pension funds between now and 2060 if contribution rates remain the same.

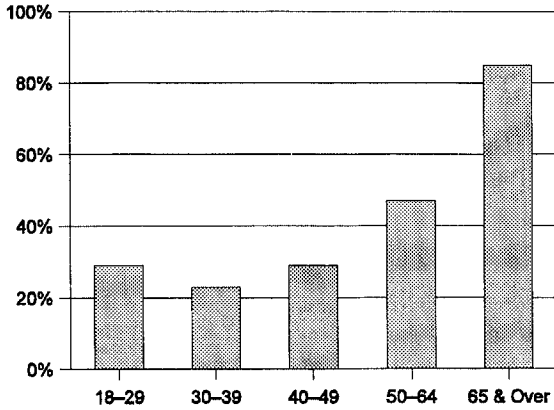
If macrocontribution rates to private pension plans were not changed, we would run out of money to fund those benefits. Of course, that isn't going to happen. But the other side of this coin is that costs will definitely rise. Many employers will ask themselves if they can afford the system that they are now promising their workers. So I will



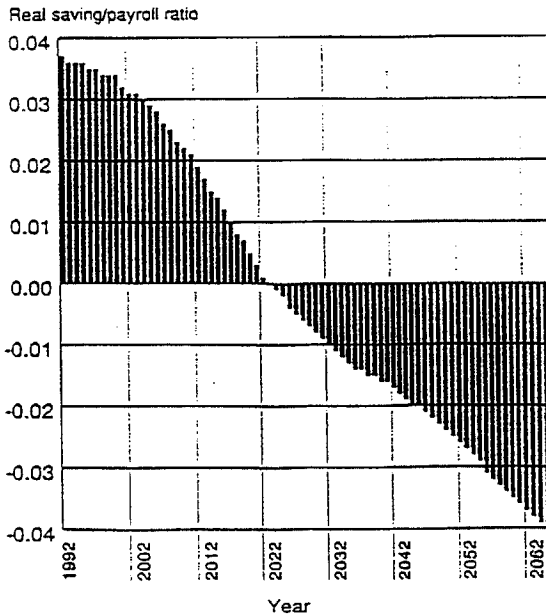
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caution you right now that many of the criticisms that actuaries level at pay-as-you-go systems can equally be directed toward private plans.

**CHART 4**  
**PUBLIC PENSION PLANS**  
**PERCENTAGE OF PEOPLE OVER 18**  
**WHO ARE CONFIDENT THEY WILL RECEIVE**  
**OLD AGE SECURITY AND CPP/QPP BENEFITS**



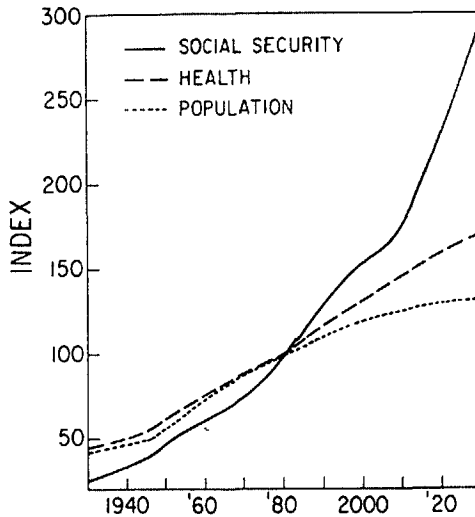
**CHART 5**  
**POTENTIAL REAL SAVING OF PRIVATE PENSIONS RELATIVE TO**  
**TOTAL PRIVATE PAYROLL, 1992-2065**  
**(ASSUMING PERSISTENCE OF CURRENT PLAN CHARACTERISTICS**  
**AND CONTRIBUTION RATES)**



So you cannot have security in Social Security if people don't believe it will be there. That is one very real aspect of Social Security. We must know that it's going to be there or it's not security. And this is what is missing today.

You found out earlier from Dr. Jane Fulton that part and parcel of the competition for public funds is the health care system. Chart 6 shows what is expected to happen in Canada during the next 30-35 years. The population is the bottom line. The health care system is not going to grow very much in real terms, without any new benefits, without any new drugs, and only offering the same system as today. Purely because of the aging population, health care costs will consume 70% more of our resources. But retirement income security will go from an index of 100 to an index of 300 in that same period of time.

CHART 6  
INDEX OF SOCIAL SECURITY COSTS (1981 = 100)



Source: Denton, F.T., and Spencer, B.G. "Prospective Changes in the Population and Their Implications for Government Expenditure," *QSEP Research Report No. 98 (June)*. McMaster University: Program for Quantitative Studies in Economics and Population, 1984.

So where are we going to find that wealth? And how are we going to fund it? Well, some of my academic colleagues say this is not a problem at all because the youth dependency ratio disappears as the baby boomers age while the age dependency ratio rises. These are just mirror images of each other. So all we have to do is transfer resources from one sector to the other. Well, I do wish that it were that easy. In fact, we do not transfer as much wealth to the youth sector as we do to the age sector. The ratio is about 2.7:1. And if you take those 2.7:1 ratings and recalculate this work, the results are real wealth transfer indexes then. These are called expenditure dependency ratios.

Today, when we have an extremely marvelously healthy demographic ratio, we're not going to change very much in the next few years, but we're going to have to find 60%

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more wealth to transfer by the year 2031. That means that the workers would have to become 60% more productive without seeing any increase in their standard of living, just to transfer it all to the elderly dependent.

Unless we look at some alternatives. One of the alternatives to allowing this 60% rise in this expenditure dependency ratio is to try to determine how we can keep it level. How can we find pay-as-you-go funding stability? Well, the answer is to go right back to Table 1. Remember that everybody is living longer. Every year Social Security becomes bigger and richer. And yet there's never a January 1 headline in the newspaper that says, "Hey guess what folks? Canada Pension Plan just became bigger because you're living longer." We never see that headline. But people do know that they're living longer.

We can actually keep that bottom line level if we can keep people in the workforce just a little bit longer. In other words, change the ratios of retired passive consumers to the workforce productive. And I'm not saying you can't retire at some age where you might like to. If you want to retire at age 57, go ahead. Do it on your own resources. There's no magical age. People don't retire today at age 65. That's a myth. People retire between age 50 and age 75.

I'm only talking here about trying to keep people as producers four years longer than the maximum, at the extreme far right, than they would have been otherwise. This formula says that nothing has to happen until 2006 based on Canadian demographics. Then the age has to shift slowly upward by two months a year over a period of 24 years. That's one-sixth-of-a-year shift per year for 24 years to get a four-year shift. And then it doesn't have to change after that.

And I think we can convince people that that's good public policy. These are all equivalent ages, actuarially, for the CPP. If we had defined the age of entitlement in 1966, these would all be equivalent. I'm not asking for the age to go to 71; I'm only suggesting that it has to shift upward by four years to keep the ratio of workers and consumers level.

I predict that some time in the next year, if you are in Canada, you will open the newspaper and find that the government is announcing a shift in the age of entitlement for CPP and OAS. I don't think it is being based on good philosophical reasons. It is being done purely to save money. But the end result will be good public policy. And I think it will be public policy that Canadians will be able to accept.

With that I'll turn things over to Howard Young. He will tell you a little bit more about what's going on in that great republic south of the border.

**MR. HOWARD YOUNG:** Well, as Mike said, the general situation in the U.S. is much the same when one looks at the demography as it is here in Canada. But much of it is in the interpretation. And as you'll see I have a somewhat more sanguine view of the future than Rob does. Let me tell you a little bit about the intricacies of evaluating the actuarial aspects of the system.

I'll speak about the U.S. system but I assume that the results would be somewhat similar in Canada. I've been chairing this panel of actuaries, economists, and

demographers of which Mike is a member. And we've been trying to dig into how these long-range forecasts are done. There are interesting actuarial aspects that I would certainly encourage you to pay more attention to, both in terms of our own professional interest and in terms of the influence we can ultimately have on public policy.

There are, as you know, these annual reports of the trustees, but these are actually turned out by the actuaries of the Social Security administration. But the actuaries are constrained to use assumptions that are adopted by the trustees and their staffs. In the U.S., they are the Secretaries of Treasury, Labor, Health and Human Services, and now, because the Social Security administration has become independent, the Commissioner of Social Security.

As we looked into things such as projecting longevity over the next 75 years, we started digging into questions of how one actually does this. How does one think about what life expectancy is going to be 50 or 60 years from now? One of the practices in the Social Security administration is to look at specific causes of death. It breaks down ten categories of causes of death and separately projects rates of improvement of each of those individual causes of death. Then it aggregates them to come up with overall mortality rates and produce life expectancy from that.

Well, there has been one large dispute within the technical panel on this issue. And it is that this technique in and of itself tends to slow down the rate of improvement of life expectancy over time. Those causes of death, which are improving more rapidly, become less important as they improve.

Therefore, the overall rate of improvement of life expectancy becomes dominated by those causes of death whose rates are improving more slowly. So there is just a natural tendency in that technique to have a curve that has a decreasing rate of improvement in mortality. On the other hand, we were offered evidence by the demographers on the panel that historically that kind of slowing down in the rate of improvement had not happened. Now when you talk about it historically much of this depends on how long you look. Do you look at all of the century? Or do you look only at the last 20 years? Or do you look at the last 50 years? This is part of the issue of the art versus the science of forecasting.

Let's look at the system overall. We are all used to using life expectancy figures, which are traditionally put out as what would be the life expectancy today. That is, what would be the life expectancy if someone of a given age today over the remainder of his or her lifetime experienced the mortality today for every future age in his lifetime? That's called a period life expectancy, right? But, in fact, we expect mortality to improve in the future. So that as people today age they will presumably not be governed by the mortality rates that prevail today, but instead will be governed by somewhat lower mortality rates applicable to their age in the future cohort life expectancy figures.

The new tables that have been published by the Society have this idea built into them. This inherently is in the Social Security projections because when an individual retires, a liability is not set up for that individual on a present-value basis. In fact, it is traced out over the person's projected future lifetime by using the anticipated mortality rates that are projected to prevail in the future, rates that improve year by year.

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Nevertheless, even though these are the techniques used, life expectancy figures are published in the report. We always see the period life expectancy figures. So, in fact, there's some additional conservatism in the report that doesn't show up explicitly, but it is there in the overall results.

You get somewhat the same kind of situation when you talk about the fertility rate. The normal measure that's published is the total fertility rate. And that, like the period life expectancy figure, is the number of children that a woman would have over her lifetime if she experienced every single year in the future the age-related fertility rate that applies this year, or the most recent measure for all women in the population.

We've seen that even more than in any variability in mortality (aside from the question of just the level of fertility), this total fertility rate is a much more volatile number than you might think. This is because in the United States there have been large shifts in the age at which women have had their children. Simply a change in the timing of when women have children will create some apparent fluctuation in that rate. And the issue has been how to separate that change in timing from whatever an underlying trend line might be.

So there are a number of interesting issues in that area. It's not all demography. It's also economics. What will be the long-term future of productivity? What will be the long-term future as to the rate-of-wage increase? What part of wage increase is due to inflation? And what part is real? What will be the underlying interest rate that is earned by the trust fund? This last question opens a whole different issue, which we'll talk about; the implications of building up a trust fund and earning interest on it.

If inflation is higher and projected to be higher than the baseline, would that drive the cost of the Social Security system up as a percentage of payroll? Or would it drive it down? How many think that a higher rate of inflation would cause the cost of the Social Security system to be a larger percentage of payroll? How many think it would be a smaller percentage of payroll?

Actually, in this case, the majority wins. It might be counterintuitive but, in fact, the higher rate of inflation under the Social Security system reduces the anticipated cost of the system as a percentage of payroll. What happens is initially you get more income in as the inflation affects pay rates overall. And it takes a longer period of time before it shows up in the adjustment for benefits that are paid out to the people already retired.

So we traced that through. Having said that, the system is relatively insensitive to the rate of inflation. It is much more sensitive to the real rate of increase in wage increases and to the extent that you're concerned with the investments of the trust fund to the real earnings on the trust fund.

But the point I want to make is that we get so focused on this issue of the percentage of the pay rate that is needed to finance the system in the future, that I think we have not paid enough attention to how affordable that percentage will be in the future.

Instead of looking at what portion of the pay rate goes to finance the system, what if we ask, having paid that portion, how well-off are people likely to be in the future?

The second alternative in Table 2 is taken to be the most realistic, or at least the one that seems most likely to happen in the future. Of course, Alternative I is a more optimistic scenario. In particular, it assumes a higher rate of real growth rate and produces more favorable results than the middle one. On the other hand, Alternative III is a more pessimistic assumption.

Those alternatives are not only more or less optimistic in their economic variables but also in their demographic variables. It's more optimistic in this system to expect that people will die sooner. So some of it depends on your overall point of view.

Anyway, what I've done is partly encourage you to look at the trustee report more carefully and to examine the wealth of data and projections that are in there. Therefore, I've identified for you the specific tables from which these data come. Instead of looking at how much of wages will be taken away for benefits, I am asking what that does in real terms when all is said and done.

So we can start with the average wage index. That's the average wage that's expected to be earned in the future by everyone who is covered by the system, which in the United States is practically everyone. And this top group is in nominal terms, so it includes inflation. By the year 2070, average wages will be almost a million dollars a year, including inflation.

Now that's roughly a 4% inflation rate, and it is a 1% real growth rate in terms of that projection. But, of course, we don't want to look at the inflation portion, we only want to look at real things. So you have the adjusted CPI. The significance of saying it's adjusted is that it's not the CPI you see published in the papers, but essentially it is that CPI using the current level of 100 as the base.

So then, in fact, by 2070 the CPI would be roughly 18 times what it is today, by taking out the growth in real wages, in my projection, over approximately 75 years. Also, I've taken the ratio of real wages to the middle of the period in 2030. At that time, real wages would be about one third higher than they are today. That's essentially 1% a year compounding. By the year 2070 they'd be about twice as high as they are today.

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TABLE 2  
OASDI PROJECTED CHANGE IN REAL AVERAGE WAGE

1995 Data		Alt I	Alt II	Alt III
Table III.B.1 (p. 177-8)				
Average Wage Index (AWI)				
	1995	24,878	24,825	24,662
	2030	114,976	130,152	154,257
	2070	668,743	916,269	1,313,241
Adjusted CPI (1995 = 100)				
	2030	280.90	383.00	555.19
	2070	916.31	1,838.81	3,908.51
Real Average Wage Ratio—Note 1				
	2030/ 1995	1.65	1.37	1.13
	2070/ 1995	2.93	2.01	1.36
"Net" of FICA needed for OASDI				
Outgo (% of payroll)				
Table II.F.13 (p. 109-110)				
	1995	11.35	11.49	11.60
	2030	14.20	17.26	20.70
	2070	13.09	19.04	28.54
Tax on benefits (% of payroll)				
Table II.F.17 (p. 119-120)				
	1995	0.16	0.18	0.21
	2030	0.54	0.68	0.84
	2070	0.64	0.93	1.41
Ratio to 1995				
'Ee & 'Er combined—Note 2				
	2030	1.60	1.29	1.02
	2070	2.89	1.85	1.12
'Ee share only—Note 3				
	2030	1.62	1.33	1.08
	2070	2.91	1.93	1.25

Note 1:  $(\text{future year AWI/CPI})/(\text{1995 AWI/CPI})$  historical data (from Econ Stat for Pension Actuaries)  $(1990/1955) = (21,027.98/130.7)/(3,301.44/26.8) = 1.31$ ; Note 2: multiply the real average wage ratio by the following adjustment ratio (for future year/1995)  $1 - (\text{Outgo \%} - \text{Tax \%})/100$ . However, if the "tax shift" affects gross wage levels, the latter should be increased before subtracting the FICA. The result would be the same as follows. Note 3: multiply the real average wage ratio by the future year/1995 ratio of  $1 - 0.5(\text{Outgo \%} - \text{Tax \%})/100$ .

Now because we know that the tax rate according to the law is inadequate under the projections to support the system, let's assume that we assess whatever tax rate is required to support the system. Obviously, if we make changes in the system, that might change the tax rate.

But let's talk about the present system. How affordable is it? What if we take the Federal Insurance Contributions Act (FICA) rate that would be required to finance the system while the cost outgo is projected to the year 2070 from the current estimate of 11.5%? (We're paying 12.4%; 6.2% for both the employee and employer each.) But that's more than is currently needed to finance the system. We're building up the trust fund. Currently, about 11.4% is needed. On the other hand, the projections are that by 2070 about 19% would be needed. The big complaint we hear is that it's going to go from the present 12.4% up to something like 19% for employees and employers.

Now in the U.S., Social Security benefits are subject to income taxes, and most of those income taxes go back into the trust fund. So some portion of the cost is mapped by the income taxes. It's equivalent to about 1% of payroll, so you don't have to raise it all from the FICA.

But if you take the wages, take out the FICA that's required, and then calculate the ratio of what will be left in real terms, as compared with today, it will be 33% higher by 2070, and almost twice as much as it is today by 2070. So if there's simply a 1%-per-year real-wage increase, the cost of the present system can be paid and people will still be twice as rich as they are today. Now will they be willing to share 20% of their pay or 10% on an individual basis? Are we willing to pay more taxes now because we're richer than people were 50 years ago? Americans don't like to pay taxes, but what about Canadians? I hear complaints about goods and service taxes and things such as that.

But my point is that looking only at the percentage of payroll doesn't give us an adequate picture. So maybe what's unfair then is that the workers will have twice as much money but the retirees will still be that much better off.

If you go through somewhat the same analysis and you talk about what the benefit payments will be and put those on a per-capita basis, real benefits as a percentage of payroll by 2030 are 29% higher than they are today (see Table 3). And by 2070 they're 84% higher than they are today. And if you remember the bottom line of the previous chart, that compares with the 33% and 93%. So even though real benefits will go up in real terms, they will not go up as fast as the remaining wealth of the people who are then employed.

And finally another way to look at that is to relate the cost of the benefit to the gross domestic product that's projected to happen (Table 4). In fact, that gives you a somewhat more favorable picture because compensation is not expected to grow as fast as gross domestic product, at least compensation that is subject to Social Security measurement, because things such as the cost of health care do not get included.



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TABLE 3  
OASI AND DI BENEFIT GROWTH

1995 Data	Year	Alt I	Alt II	Alt III	
<b>Current \$ OASDI Benefit Payments—Billions</b>					
Table III.B.4 (p. 183-4)	1995	339	340	341	
	2030	2,526	3,136	4,121	
	2070	17,195	25,707	42,314	
<b>Adjusted CPI</b>					
Table III.B.1 (p. 177-8)	1995	100.00	100.00	100.00	
	2030	280.90	383.00	555.19	
	2070	916.31	1,838.81	3,908.51	
<b>Cost Rates—% of Payroll</b>					
Table II.F.13 (p. 109-110)					
	OASI	1995	9.94	10.05	10.12
		2030	12.59	15.01	17.71
		2070	11.49	16.64	25.07
	OASDI	1995	11.35	11.49	11.60
		2030	14.20	17.26	20.70
		2070	13.09	19.04	28.54
<b>OASI Beneficiaries—Millions</b>					
Table II.F.19 (p. 122-3)	1995	37.440	37.449	37.459	
	2030	67.330	69.566	72.140	
	2070	80.465	83.806	91.016	
<b>OASI Real Benefits/Beneficiary—Note 1</b>					
\$ thousands, annually	1995	7.93	7.94	7.94	
	2030	11.84	10.24	8.80	
	2070	20.47	14.58	10.45	
Ratio to 1995	2030	1.49	1.29	1.11	
	2070	2.58	1.84	1.32	
<b>DI Beneficiaries—Millions</b>					
Table II.F.19 (p. 122-3)	1995	5.731	5.769	5.815	
	2030	9.135	11.286	13.459	
	2070	11.493	12.614	13.347	
<b>DI Real Benefits/Beneficiary—Note 2</b>					
\$ thousands, annually	1995	7.35	7.39	7.48	
	2030	11.16	9.46	7.97	
	2070	19.96	13.97	9.86	
Ratio to 1995	2030	1.52	1.28	1.06	
	2070	2.72	1.89	1.32	
Note 1	(\$ thousands) = $\{(Curr \$ OASDI)/(CPI/1000)\} * \{(OASI rate)/(OASDI rate)\}/\{OASI Beneficiaries\}$				
Note 2	DI calculation is similar to Note 1, but uses residuals; hence subject to larger rounding error.				
See Table III.B.5 (p. 185) for various average benefit projections. Unlike the above, those do not reflect changes in beneficiary mix. Hence the above seems more appropriate for comparison with active worker averages, since the latter reflect mix changes. Adjustment could be made for the tax on benefits, but the result would not be comparable with active worker earnings before similar taxes.					

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TABLE 4  
OASDI RELATION TO GDP

1995 Data	Year	Alt I	Alt II	Alt III
<b>Current \$ GDP—Billions</b>				
Table III.B.1 (p. 177-8)	1995	7,169	7,116	7,059
	2030	43,447	46,765	53,426
	2070	333,588	375,219	446,393
<b>Current \$ OASDI Outgo—Billions</b>				
Table III.B.4 (p. 183-4)	1995	339	340	341
	2030	2,526	3,136	4,121
	2070	17,195	25,707	42,314
<b>Adjusted CPI</b>				
Table III.B.1 (p. 177-8)	1995	100.00	100.00	100.00
	2030	280.90	383.00	555.19
	2070	916.31	1,838.81	3,908.51
<b>Covered workers—Millions (includes part-time and part-year)</b>				
Table II.F.19 (p. 122-3)	1995	141.777	141.209	140.776
	2030	178.077	164.988	153.411
	2070	226.523	174.011	133.047
<b>Real "Net" GDP per worker: (using GDP-OASDI)</b>				
\$ thousands, annually	1995	48.17	47.99	47.72
See Note 1	2030	81.81	69.04	57.89
	2070	152.43	109.23	77.71
Ratio to 1995	2030	1.70	1.44	1.21
	2070	3.16	2.28	1.63
<b>OASI Real Benefits/Beneficiary—from previous worksheet</b>				
\$ thousands, annually	1995	7.93	7.94	7.94
	2030	11.84	10.24	8.80
	2070	20.47	14.58	10.45
\$ annually/Billion GDP	1995	1.11	1.12	1.12
See Note 2	2030	0.77	0.84	0.91
	2070	0.56	0.71	0.91
Note 1	$\{ \$ \text{ thousands} \} = \{ \text{Curr } \$ \text{ GDP-OASDI} \} / \{ \text{CPI}/100 \} \{ \text{Covered workers} \}$			
	Comparative data—without OASDI deduction: Historical (from Econ Stat for Pension Actuaries) (GNP/Labor Force, 1990/1960) = (39,224/28,511)			1.38
	Projected—Alt II—GDP per covered worker, 2030/2000 $\{ (46,765/383.00) / (164.988) / \{ (9,143/118.21) / 147.000 \}$			1.41
Note 2	$\{ 1000 * \text{OASI/Beneficiary} \} / \{ \text{GDP}/(\text{CPI}/100) \}$			

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If you look at the relation to gross domestic product, the real net gross domestic product per worker, net of the money that's required to pay Social Security benefits will, by the year 2030, be 44% higher than it is today. And by the year 2070, it will be well over twice what it is today. On the other hand, if you compare the benefits going to retirees, they shrink on a per-capita basis; they are a shrinking share of gross domestic product.

So my point is that we constantly publish these numbers that say what percentage of payroll is required to finance the system. And that clearly will have to increase. But as we heard earlier, we have a lower tax burden in the U.S. than in practically any other industrialized country in the world. And we certainly can afford to pay taxes. My point here is that in wealth terms, people will be able to pay more taxes, but I'm not so much of an unrealist as to say I don't think that they will complain about it.

I don't know what impact that will have. So that brings us then to a brief discussion of some of the proposals to change the system, other than simply allowing the tax rate to go up. That is certainly one possibility that can happen to change the system.

The genesis of this panel that I chair is that we are advisory to the legally constituted quadrennial advisory council, which, since the 1930s, has been set up under the U.S. Social Security Law to come in with policy recommendations. We are simply asked to look at this from a technical point of view. But that panel has been debating its policy recommendations, and all I can tell you are some of the things that they are thinking about. Nobody yet knows where they're going to come out. And, of course, no matter where they come out, what will happen will depend on what can be done in the Congress.

Some of the things they're talking about are obvious. The one that Rob outlined is to change the retirement age, the retirement age meaning the age at which you get your so-called full benefit. In the U.S. this primary insurance amount is the figure that's calculated for you based on your wage history. The current policy is if you retire at age 65, you get 100% of your primary insurance amount. If you retire at age 62, you get 80% of your primary insurance amount. If you wait beyond 65, you can get somewhat more than your primary insurance amount. It's already scheduled under the law that for those of you born in 1938 or later, you will have to wait beyond age 65 to get 100% of your primary insurance amount. You will either have to wait until age 66 or ultimately until age 67.

But you still can retire; that is, you can start to collect benefits at age 62. It's just that ultimately, instead of getting 80% of the full primary insurance amount, you would get only 70% at age 62. So this fiddling with the retirement age is simply a euphemism for saying: let's cut benefits across the board. It's simply a percentage reduction in benefits. Depending on when you leave, you will get less than otherwise would be scheduled. And the point is to let that continue to move up to some specified age such as 68 or 70. It is even being proposed that there might be some kind of automatic indexing of the retirement age based on the estimates of life expectancy.

Now I think that's easier said than implemented. Do we make these estimates only a year ahead of time and tell everybody to retire the following year? Or do we do that ten years ahead of time in which case we're working with estimates of what we think longevity will be? There will be some interesting actuarial issues there.

Another issue is that there are other ways to revise the benefit formula. Raising the retirement age in terms of the full benefit age, as I say, is an across-the-board cut in the benefit formula. A number of other proposals are being considered, which are proposing to somehow change the benefit formula slightly to reduce the benefits that higher-income retirees will get rather than reduce the benefits to lower-income retirees. That's another complex proposal. They all go to the question of the initial benefit. There's also the question of what to do about postretirement inflation protection.

There is the debate about how the cost-of-living index is measured. There's now an increasing belief that the cost of living overstates inflation to some extent. But if that's true, then we've undermeasured what real age increases have been in the past. But no matter how we measure inflation, there's also the question, given the measure that comes out, of whether to provide full inflation protection. Do you provide inflation protection at  $-x\%$ ? There are a number of proposals there. This Kerry-Simpson proposal has surfaced. For those of you who don't know about it, Kerry and Simpson are two senators (one Democrat and one Republican) who have joined together to make a proposal. One idea they floated is no matter where you set the inflation protection, you only give that full amount to some lower group of retirees. In fact, you'd only give that full amount to the lowest 30% of the people retired. The remaining 70% would get progressively less inflation protection as you go up the income ladder.

Many proposals are in effect to reduce the degree to which the Social Security system protects against inflation. This is one of the unique advantages of the Social Security system as compared with almost any private retirement system we have.

Two other novel ideas are being floated, but whether they'll go anywhere, your guess is as good as mine. One is that we build the trust fund up even faster than it is now projected to be built up and then utilize some of the income from the trust fund to pay benefits. Some people claim that investing the trust fund in government bonds isn't a real investment in the first place. Others claim that the interest being paid on it isn't real. But in any event, they are government bonds and they are owed to us. They currently can be drawn on. But they have to come out of tax income. Another proposal is to invest some of the trust funds in private-sector securities.

I understand that in Quebec that's done with some of the assets of the Quebec pension system. Maybe we can learn something from that. The assumption there is that there will be a higher rate of return; whether there would be a higher rate nationally is an open question. If you don't increase total national savings, you don't change things much. But you devote more of it to the Social Security system.

Finally, there are proposals to, in fact, create mandatory individual accounts and divert a portion of the Social Security taxes to those and then somehow come up with the equivalent of a defined-contribution plan. But how would we protect people against the fluctuations of the investment market?

So we have many proposals out there, all of which could use good actuarial analysis. With that, I think I'll close so we can have questions. I guess my underlying message is: yes, we'll need more money. It's not unmanageable; the degree of the issue is relatively small. The question is do we want to do it? Don't lose sight of the fact that we have a much bigger problem on the health care side and a much more intractable problem for all

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the reasons we heard earlier today. The OASDI program is simply a question of how much money to spend and how to allocate it. On the health care side, it's much more a question of how to deliver the services that we're concerned about.

MR. STEVE J. KOPP: I just want to make sure I get the situation straight here, based on the two sessions we've had today. Health care costs in Canada take up a large percentage of our resources. And some people would say they've gone out of control in the last 10–20 years. Our Social Security system is threatened unless contribution rates are raised significantly to 14.2%, as Rob Brown said, from our current 3.6%, or we work longer, or both. So no "Freedom 55," as one of the insurance companies in Canada says. Unemployment is high in Canada, 11%; youth unemployment is even higher.

Canadians complain about being taxed to death, both in the income tax area and in the sales tax area, both federally and provincially. Competence in government is fairly low in Canada. There's large government debt at all levels—federal, provincial, and municipal. So my question is, is there any good news out there?

MR. BROWN: I quite often start my talk by saying the problem with the future is that isn't what it used to be. And politically this is a important question. Through the late 1950s and all the way through the 1960s, we had very rapid, very high rates of wealth creation growth. The economy was very good. The politicians were able to develop and expand wealth transfer schemes and, of course, get reelected all at the same time. So that which was politically fun was also good public policy. Now we're faced with a situation in which what is good public policy is not fun politically, because we're going to have to find ways to make these systems that we created affordable in the real times. Clearly, the best way to make these systems affordable is to have a strong economy. You must create wealth before you can redistribute it. So the best public policy then is to have a growing economy.

At the same time, I think it behooves us, as professionals with the type of knowledge that we have, to become part of this discussion, because there is no reason to stop being a caring society. We are creating wealth. And as Howard pointed out, while the rates will go up, you don't have to work more hours to be able to have those systems. Actuaries know that and can make that understandable in a public policy form. I would hate it if at this point we just turned our backs and said, "Everybody for themselves, the life boat is going, last man in, and away we go." I hope we can be part of the process that says we can afford to be a caring society.

MR. DREIGHTON H. ROSIER: Two items—one, I do take issue with the observation that raising the retirement age simply means cutting benefits. I think there's a real difference in accomplishing the mission of a social insurance team and cutting the adequacy of benefits at all ages. We're including and comparing the older ages in which people can no longer make adjustments in their lifestyles against the age(s) at which they start drawing the benefits. And I think that's something that often gets overlooked.

I'm not sure what the reserve fund does in Canada. But in the U.S., the reserve fund is invested primarily in financing current consumption. And I'd like to hear the speakers' views on whether the accumulation of a reserve fund beyond what is needed to stabilize liquidity might actually have a negative impact on the capital formation and the ability of the society to meet the benefit needs.

MR. BROWN: The Canadian system has a side fund that presently is about two-and-a-half years' worth of benefits. It's meant to be there as a contingency fund. It is not there to prefund the benefit. It's not an actuarial reserve. It's a rainy day contingency fund, although most people in the media misinterpret that. It's a difficult concept.

Should, or could, we provide a higher level of security by having more reserves in the actuarial sense? Howard touched on this and I will repeat what Howard said, because I happen to believe it. There are two things that have to result from having greater reserves. Number one, you must increase gross national savings rates. If by setting up those reserves people just save less in their own way, then you've done nothing. But even having done number one, those savings have to be used in a way to increase productivity and increase real wealth. And the real-world examples of where you have handed money over to the government in terms of Social Security reserves do not make me feel good.

Two things have happened. First, by seeing all the funds, people have demanded greater benefits from the Social Security system when they weren't justified. Second, the funds were used for lemonade. They weren't used to go out and get tomorrow's industry cooking. And the rates of return in terms of wealth creation, in terms of real rates of return in the systems that, have done that have been zero to negative.

MR. YOUNG: Two things. On this question of the retirement age being a cut in benefits, the way it has been enacted in the U.S. is simply a cut in the benefit formula. What is scheduled to happen is that starting in the year 2000, you can continue to start to draw benefits at age 62, so there is no difference in the ability to start collecting benefits if that's what you choose to do. You simply get a smaller benefit than you otherwise would have if the law hadn't been changed. And that smaller benefit is a proportionate adjustment no matter where you are in the earning schedule.

There are other possibilities as to how you might manipulate the benefit schedule. As I say, there are proposals that say if we are going to cut benefits, Let's do it in a way that does not impact across the board, but impacts presumably higher-income people more than lower-income people. In fact, a group called the Concord Coalition, headed by two ex-senators, is proposing that Social Security benefits be means-tested, so that there are alternatives to an across-the-board cut.

On the question of the use of the reserve fund, in the U.S., it's now about a year-and-a-third benefits. Under projections it would grow to perhaps three or four times payout. So it's never a real pre-funding arrangement. Whether, in fact, you could ever pre-fund things on a national basis is a good economic question.

But the real point is this is not an issue within the Social Security system. This is an issue of national finances generally; making money available for public purposes. There are clearly useful things that could be done with it.

Rob and I both teach at the university level. And I guess it's somewhat self-serving but one thing that could be done with funds is to help build human capital. It's now more difficult for people to get university education than it was 20 or 30 years ago. Presumably, it will become even more difficult, especially in the U.S. where there are proposals to cut down on the amount of money that's available to finance university education both directly and indirectly. Clearly, we heard that creates problems for people to be

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productive. So there are ways to make good use of public money. The fact that we haven't chosen to do that is a question of our political decision-making.

MR. TROY J. PRITCHETT: You didn't treat the subject of immigration in your dependency ratios. Because we're totally out of step with the rest of the world as far as our baby boom and baby bust, I'm wondering what level of immigration it would take in Canada and the United States to keep the dependency ratios the same.

The second point is I'm much less cavalier about total fertility rates being 1.5%. Basically, if industrial life leads us to those fertility rates, within a millennia we'll all be gone. I think it's a cultural disaster. It's much easier for nature to self-correct overpopulation than underpopulation.

MR. BROWN: With immigration it turns out that you need fairly massive rates of immigration to overcome the changes in the number of live births. Two years ago, Canada increased the net immigration rate. So instead of having 80,000 net immigrants a year, they're now allowing about double that. And the target is even higher. It's just that our criteria are tight enough that we're not filling our targets. But we've doubled it.

Now what if immigrants happen to be aged when they come into the workforce? Let's just choose a couple of absolutely arbitrary numbers. Let's say immigrants are aged 28-44. Does that help Social Security funding? Well, if you think about those numbers, the immigrants just add to the baby boom born between 1952 and 1966. In terms of population aging, immigration doesn't bring the age down very fast. Births bring the age down much faster than immigration. Studies have been done in Canada that show that if you want to change those funding ratios by 1%, you have to wait until the year 2020 and then change from the old immigration guideline of 80,000 net a year to 640,000 net a year.

MR. SZE: The impact of immigration in the U.S., again, although politically very sensitive, in terms of the financial status of the Social Security trust fund, is not that big. Perhaps Howard Young will elaborate on that.

MR. YOUNG: The situation is essentially the same. You gain some in terms of immediate income from having immigration. The interesting question is that actually the change in assumption from last year to this year was an increase in the number of illegal immigrants. Then the question, of course, is to what extent, if they are employed, do you collect taxes on them and do they actually come in and claim benefits? Because they're illegal to begin with, it's hard to find them. So you don't know if your number is correct, you have no basis to check your assumptions, except very much after the fact.

FROM THE FLOOR: I think one of the issues that's going to come out in the future with these public pension schemes is one of equity. I don't think you can get away from the issue of a money's worth analysis of the people contributing to the schemes.

When the schemes were implemented, clearly the early beneficiaries received more than their money's worth. The politicians certainly got kudos. Now as the system matures, people are threatened with getting less than their money's worth. And I think with the public that's going to be an issue.

If you try and shift it over to more of a concept of a caring public, then I think you want quite a different program. Because if you're into a caring public right away, if you're into that issue, you don't want universality in this kind of system. We're talking about public pensions, even for people who don't necessarily need them. So that seems to contrast with a caring society.

So I think either you must sell the scheme or come clean and say, no this isn't about getting your money's worth. This is about caring and protecting for people who need it. Or if that's not going to be it and you're still trying to sell it along the idea that it's kind of your money's worth, it's not as good as it used to be.

I don't think people will accept that. At some point in time they're going to stand up and say, where were the actuaries? Where were they during all this? Did we come forward and say to the public exactly what's going on here? So, with that in mind, I guess I'm wondering if at some point we shouldn't be winding up the counter-pension plan and replacing it with something else.

MR. BROWN: Well, I don't think so. I personally believe that the system of guaranteed income supplement and a contributory earnings-related plan is darn good. Universality is, in fact, a very attractive feature of that. A caring society goes to a certain extent. But, I think, universality is what makes it sell. And there's still redistribution of wealth.

Go back to the 1960s and look at the rate in which the labor force was growing and was projected to grow. Look at the birth rates and look at the real net rates of return and interest rates. Pay-as-you-go made more sense actuarially than full funding. Today, if you look at the rate of growth of productivity, the rate of growth of the labor force and real interest rates of 6% or 7%, defined contribution, fully funded actuarially makes more sense than pay-as-you-go.

Now, do you and I both think that real interest rates are going to continue to be 6-7%? Because if we do we're going straight to hell in a hand basket anyway. If we don't, then there could be a day when pay-as-you-go starts to look almost as good as fully funded. So actuarially I don't agree that we weren't there. I would say that we aren't understood when we're there.

MR. SZE: This actually comes back to my opening quote. We certainly are not here to bury Social Security. I agree that we are getting a good deal with the systems in the U.S. and Canada. And we actuaries of all people should know it. With that, let's have the last question.

FROM THE FLOOR: I guess I'll make it more of a comment than a question. I want to echo the need for the growth of real wealth in society. And then if we have time, the question is: isn't social retirement as opposed to private retirement a subset of the broader question of unemployment? Back to the wealth question: no amount of increasing retirement ages will have a net benefit to society if people become unemployed at age 60 or 62 or 65.

MR. YOUNG: I think you're right. If the retirement age is changed, will employment opportunities be there? Not only for the people in their 60s, but for younger people? I



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mean if what we do is simply enlarge the pool of people who are competing for available employment opportunities, we certainly won't gain anything.

MR. BROWN: You can't just put them from retirement onto welfare or disability income or some other system that drains the tax base. The real key to this is to make sure there will be jobs. But will the workforce be trained for those jobs? In fact, we will see headlines not very far away from now that will say we can't find people to fill certain jobs, but there's 11% unemployment.

