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THE EXPERIENCE OF LIVING UNDER SUSTAINED INFLATION

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Many countries have lived for many years with the type of hyperinflation now being experienced or anticipated in the U.S.A.

This session will deal with not only how the insurance industries in several such countries have dealt with the reality of the problem with respect to the development and marketing of insurance products, but also how such things as:

1. the overall business and economic environment;

2. the taxation structure of insurance companies;

3. the availability of suitable investments;

4. the insurance regulatory climate; and

5. the structure of worldwide capital markets

will influence insurance companies and their products under periods of high inflation. Possible applications to U.S. insurance in the 1980's will be explored.

RICHARD E. SWAGER: It's very clear that actuaries in this country have been thinking about inflation and how to deal with it. To summarize some of the things they're thinking about, they're thinking about products that make sense to the consumer and to the insurance company. At the Atlanta meeting, they talked about what might be the ideal indexed insurance policy. Actuaries are also thinking about how our agents will be able to deal with what appears to be more and more complex products that will be necessary to deal with inflation. Our actuaries have looked at reserving methods, their appropriateness under inflation, and the changes that will be required to present a true financial picture of insurance companies in this country and to protect the solvency of those companies under sustained inflation. They studied the C-3 risk, the risk that our assets are subject to strong fluctuation under inflationary conditions, particularly long bonds. They've also explored whether our traditional insurance companies have the capacity to meet severe tests of cash flow under worst-case scenarios, such as everybody surrendering. Several companies have actually been doing quarterly market valuations of their assets to see if assets can really support all liabilities.

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One of the main thrusts of the panel on inflation and indexed policies at Atlanta was that the risk of inflation almost surely will be necessarily shared between the insured, the insurance company, and to some extent, the government. I believe that all of our panelists share that view.

Actuaries in this country have been dealing with scenarios that look at moderate rates of inflation in the 3% to 4% range, and high rates of inflation in the 10% range, and they have been developing products and reserving techniques on that basis. Our panelists, however, have been dealing with real rates of inflation in excess of 25%, and currently in the neighborhood of 100%. We're going to attempt today to tell you how the insurance industry has survived under those kinds of conditions. The more I've talked to our panelists, the more I've come away with the notion that perhaps some of these companies who have lived under these very high rates of inflation may be better able to deal with it than U.S. companies can deal with a rate of inflation of only, say, 10%.

Our goal is to examine what's happened to the insurance industry under extreme inflationary conditions. We won't limit our discussion to life insurance but will also consider property liability insurance to the extent that inflation impacts both, and perhaps it impacts property liability even more profoundly. To some extent, we'll be able to learn some lessons from what's happened in property liability insurance. I've asked our panel not to duck any ideas or issues that may appear controversial based on what we're seeing in this country.

Mexico has been living with high inflation for quite some time. Last year it was over 25%, and it's expected to be over 50% this year. Our first panelist is Luis Huerta, Vice President of La Comercial, one of the largest insurance groups in Mexico.

LUIS R. HUERTA: Six years ago, the discovery of some important oil fields in Mexico opened the door for economic development. Some of the results have been:

1. An annual economic growth rate above 8% since then.

2. An important increase in employment. In 1981, the employment rate was 5.4%. This rate, compared with an increase of only 3.5% of the owrking age population, means that we are really fighting unemployment.

3. Oil exports reached the record figure of 14.6 billion dollars in 1981 with an average of 1.1 million barrels per day.

However, a need for goods and services, high governmental expenses, and most significantly, the decrease of oil prices in recent months, have resulted in the following:

1. Mexican external debt reached a very risky level of 68 billion dollars in 1981.

2. The government cash deficit was 11.7 billion dollars in 1981.

3. The inflation rate has been increasing every year, reaching 29.8% in 1980 and 28.7% in 1981.

4. Although the Mexican peso was devalued every week for the last 18 months, a higher devaluation was needed. In February of this year, the exchange rate went from 27 pesos to the dollar to 45 pesos, a devaluation of 70%.

These and other financial conditions lead to an expected inflation rate in 1982 of 50%.

Some important effects of the above on the life and health insurance industries are:

1. In individual life, the proportion of second year and older portfolios is too small compared with first year sales, and therefore the net contribution of old portfolios cannot help to pay the high cost of new business.

2. Administrative expenses, particularly those originating from old portfolios, are too high and premium loads are not enough.

3. Claims ratio, expecially for health insurance, is increasing very rapidly.

Some of the efforts that have been made to solve these problems have been:

Individual Life Insurance

Product Design

Product design for individual life insurance has been developed to create new coverages that allow for inflation adjustments. Two products have had some success.

First, premium calculation has been made considering some fixed annual increase in premium and sum insured, for example, 35%. Every year the insured has the right to increase his rate up to a maximum of 35%. If inflation in any year is higher than 35%, his increase will be only 35%, and the difference will be compensated in future years with lower inflation, should there be any. Notwithstanding the problems that may arise with reserves (this can be easily solved), the advantages are clear considering that the additional insurance will be purchased at the premium rate of the original age instead of the attained age, without evidence of insurability.

Second, normal products are sold but with special rates created for the purpose of purchasing additional sums of insurance. For example, if somebody buys a 20 year term insurance policy at age 40, he will buy a 19 year term at 41, and so on. Although the additional sum is going to be subject to a rate according to the attained age, the special rate applied is very low since acquisition costs are small. After some years, in some cases the current rate may be higher than the original rate, but the advantage of being able to increase the sum insured without limit is very important.

These two solutions seem too simple at first glance, but they have had some success precisely because of the simplicity of their administration and because they are readily understood by both agent and client.

Marketing Strategies

The traditional sales system, and by this I mean agencies and agents, is threatened. Pure life agents find it difficult to make a living selling one or two policies a week.

In my country, however, companies are licensed for both life and non-life products, and this helps to solve the difficulty since an agent is able to sell fire, automobile, and liability insurance as well as life insurance. His interest in the client thus continues because he has the chance to obtain additional and permanent income from the other policies.

Companies still have the problem of the high cost of new business, which, as I mentioned before, cannot be compensated for by the old portfolio contributions.

One Mexican company that formerly issued only non-life insurance began issuing life insurance four years ago using a flat commission scale. Last year, this company ranked 20 out of the 27 life insurance companies in Mexico. They are making good profits. Their agents don't miss other kinds of commission scales since they were accustomed to flat scales as non-life agents. The use of flat commission scales may prove a good solution for the future. It has clearly been a success for this particular company.

Some significant efforts have also been made in mass marketing approaches to reduce acquisition costs. Although no large successes have been attained, companies are enthusiastic about these approaches and will continue to try them.

A recent change in Mexican insurance regulation allows for employed agents. No company has as yet started with a program to sell through this type of agent, but this could be a possibility for the future.

Independent of the product and distribution system, the impact of inflation on the insured is avoided by issuing policies in stronger foreign currencies, particularly U.S. dollars. Since Mexican inflation is much greater than U.S. inflation, the peso has to be devalued periodically and, by having a policy in dollars, the policyholder can be sure that his policy will almost retain its value. However, Mexican regulation discourages policies in foreign currencies by requiring the use of lower technical rates than for peso plans, and therefore a less competitive price results. For the record, I can mention that the largest life claim paid in Mexico was in dollars - 5.5 million dollars - and my company had the dubious honor of paying that claim.

Group Life

The impact of inflation is not as important in group life as it is in individual life, but there are some important considerations.

First, I would like to analyze the needs of the Mexican client. As I mentioned, employment is increasing rapidly due to industrial expansion and development. Obviously, turnover rates are also up as the need for qualified personnel increases. Individual sums insured may vary more than once a year since most of the rules establish sums according to salary and this may vary constantly. In addition, large corporations acquire new companies and try

to make their benefits conform to the larger plan. At the same time, they try to optimize their cash flow. All this calls for creative and flexible insurance companies. Traditional administrative systems for group contracts can no longer be used. Insurers have changed drastically in this sense, making issue, claim and recordkeeping extraordinarily simple for themselves, their clients, and the agents or brokers. The number of documents that have to be issued or submitted has been greatly reduced and, in addition to claims and premium collection, companies must be in touch with their clients once a year and, in some cases, once every three years. Under high inflationary conditions, expenses must be cut and this objective has been obtained in group insurance.

Problems arise when clients go further and want to manage their own pesos rather than allow insurance companies to do so. We are noting a very dangerous trend toward Administrative Services Only systems and similar approaches. But I believe we can resist the trend a while longer by keeping administration simple and by offering good dividend formulas.

Group Health is in a completely different shape. Loss ratio and claims handling expenses are rising every day because of inflation. In the near future some indexed plans will be introduced and I think they will be a good solution. Only experience will provide the answer.

Pensions are not insured in Mexico and must therefore be trust funded. Retirement pension plans are established in Mexico basically to finance a severance payment which by law all companies must provide their employees in case of dismissal. This amounts to three months' salary plus 20 days for each year of service. All pension plans are designed so that the present value of benefits is equal to this payment. Several kinds of payment forms are available but, of course, in times of high inflation, almost all retiring employees are choosing lump sum payments. Those employees who have chosen pensions are having difficulty since the payment they receive each month is just not enough. Companies are trying to help and some companies have established mechanisms to revalue pensions using the difference that exists between real investment income and the income which was assumed. But the truth is that the problem of retired persons has not been solved.

In conclusion, I want to say that we are living with inflation and although we are still learning to solve most of our problems, our industry is on its way.

The next two years will be the most difficult in our history in terms of the economy. Low oil prices, high inflation and the change in government this year are threatening us. If we survive (as I hope we do), I'm sure that we'll have very interesting experiences to share.

MR. SWAGER: The idea that you can possibly deal with your new issues still doesn't look at how you deal with your in-force portfolio. Our next speaker is Dr. Yehuda Kahane. He's authored many papers on inflation and is currently writing a book on inflation. Most of his studies have focused on the actuarial aspects of both life insurance and non-life insurance coverages, and in recent years he's concentrated his research on the inflationary effects in these areas.

DR. YEHUDA KAHANE: Israel has a "moderate" rate of inflation - only 10% - per month. In one year we have more or less the inflation rate that you may face in 15 years or so. The question is whether our experience is relevant to you since you don't face such high rates of inflation and you hope to face even lower rates.

I think that the Israeli experience is extremely relevant for U.S. insurers because of two things: first of all, the very high inflation rates give Israeli economists an opportunity to work in a "lab" without the need for a microscope. We may, therefore, observe all kinds of magnified effects. You are subject to the same effects but sometimes you don't realize that they are there. Secondly, when you go out in Alaska, you usually wear a fur coat. Similarly, when you face very high inflation rates, you are usually protected because there are some protecting mechanisms which you don't have here. Firms and individuals will otherwise be unable to survive a very high inflation rate even two or three months. So, it is possible that you are even more vulnerable to the effects of inflation here. We learned to live with inflation. The question is whether you can live with inflation.

Indexed Life Insurance

As you know, the problem of life insurance in times of high inflation is that you are trying to sell a product that is guaranteed to fade and shrink. People are less willing to buy life insurance products because the financial protection and the savings element may erode very quickly. One of the solutions which has been suggested is to introduce indexation. "Indexation" sounds like a very complicated term but actually it's a very simple idea and should not be feared. We are talking about exactly the same products which are sold here except that they are indexed. In other words, they simply reflect the changing value of money. Although the policies are denominated in the same currency (in dollars or the Israeli shekel, for example), the value of the currency, its purchasing power, changes. Indexation means preservation of the purchasing power of all the monetary terms of the policy. Indexation means that if, for example, you have a 100 shekels policy and inflation is at 100%, then the face amount will be adjusted to 200 shekels. Similarly, cash values, commissions and premiums will be indexed to reflect the timing of the payment. You don't really have to fear the complexity of the new product. It's actually the same thing.

The key element in understanding indexation is the investment field. You need indexed net investments because without them the insurer bears the entire financial risk. The question is how to get indexed investments. Who is going to offer these indexed investments? In most countries where inflation is heavy, government intervenes and offers some sort of indexation. In Israel, indexed bonds are sold by the private sector, but the government takes part in that it guarantees certain parts of the indexation. We shall talk about this later. However, keep in mind the possibility that the private sector, too, will offer indexed bonds or other indexed investments.

Theoretical analysis shows that indexation sometimes reduces the risk to the borrower. Companies usually object to indexed bonds principally because they are alleged to increase the cost of capital. But if you think about it in theoretical terms, you can show that the firm is actually borrowing at a lower risk. For example, if the firm would have guaranteed a rate of interest of 2% to 3% in real terms (plus the indexation), it would be paying today a much lower interest than the current market rate of interest.

The alternative to indexation is to introduce other types of policies (variable annuities, universal life or other instruments familiar to you in this country). Another alternative, which was mentioned earlier but which is not applicable in the United States, is to denominate policies in foreign currencies. This could be a very good solution in cases where the foreign exchange is stronger than the local currency (e.g., in Mexico where the government intervenes in determining the exchange rate). We don't have these products in Israel although we did have them in the past. In 1977, the exchange rate market was liberalized and the exchange rate more or less reflects the price index movements minus the imported inflation and interest rate differentials.

Indexation doesn't solve all the problems; it solves most of them. You still have to worry about some specific problems such as the choice of the relevant index. Is it going to reflect current price changes or those experienced in the previous month (for which the price index has already been published)? The definition could be a very critical question. Another problem which is extremely important is the question of which index to use. Should we use the wholesale price index, the consumer price index, or maybe the wage index? You have the same problem, by the way, with the Social Security system. Benefits are tied more or less to the Consumer Price Index. Since real wage increases in the economy are still supposed to be around 2% or 3% per year above the price changes, in 40 years you'll find out that people are carrying too little protection in real terms. "Too little" means maybe half of the protection or even less!

Inflation in Non-Life Insurance

Insurance is a means of sharing the risk between insurer and insured. Many non-life insurance policies have some sort of co-insurance clause and therefore the burden of inflation is shifted to the shoulders of the insured. This means that insurers often sell less expensive policies which also offer less coverage. It is possible to develop products which will be sold for a higher price but will give better protection. Investment income will have to be included in rate making and the insurance premium in non-life insurance will have to represent a concept long ago adopted in life insurance, i.e., that the premium represents the present value of the losses. Due to time constraints, we shall not discuss this problem here.*

Indexation and the Government

We've been talking about how to react to inflation and my suggestion is that you do not react to inflation. Inflation is not one of the ten commandments. It can and should be cured, or at least be controlled. Reacting to inflation

*A more detailed discussion can be found in Y. Kahane, "Property-Liability Insurance Contracts in an Inflationary Environment," CPCU Journal, December, 1981.

creates its own problems. Even with indexation, you find that the major problem in offering indexed investments is that the government will usually have to share the financial risks in one way or another.

A normal capital market is a market where savers give their money to investors and receive securities in return. The demand and supply equalize through the interest rate. This process usually takes place in the capital market through financial intermediaries. The Israeli government decided to intervene in the process because savers were unwilling to save as much money as the government would like them to save in order to reach the desired economic growth. In order to encourage saving despite the high inflation rate, the government stepped in and said: "Well, we'd like to have your money and we'll offer you indexed bonds." Usually this process is not done directly between government and savers, but rather through intermediaries. The government uses the money to finance the budget or channels it back to investors in the form of subsidized loans or investment incentives.

The major problem with government intervention in the capital market is that it may ruin the very delicate balance of interest rates. In order to encourage savings, the interest rate on amounts saved must be artificially kept above the yield on investments. In other words, the government assumes a liability to cover the gap between the two interest rates. But eventually the government will have to cover this gap. This will affect the government's own ability to spend money. So, when indexation is offered through the government and not through the private sector, you face the risk that the instrument will be abused, causing tremendous problems in the long term. In retrospect, it will represent an attempt to pull yourself off the ground by pulling your bootstraps and nothing more.

Effects on Accounting and Reporting: Taxes and Investment Income

Inflation affects almost all the activities of a company. It affects almost all the financial variables and is regarded as the key to the analysis of firms and financial decision-making. The point is that inflation seems to affect almost all the accounting figures. You have higher sales, higher premium, higher commission, higher administrative expenses. The loss ratio, for example, may exceed the alarming figure of 100% - but you'd be surprised to see that nobody really worries about it. The trick is to think in real terms, i.e., in constant prices. When you correct the figures appropriately, you find that inflation has very little effect on the activities of the firm. Most of the effects are fictitious and not real effects. The question is: are all the problems artificial? We find that some are and some are not. Some problems are real problems.

What are these real problems? There are quite a few. The first problem is that our accounting system is not neutral with regard to inflation. Inflation may affect the reported profits and therefore affect tax payments. All around the world, tax systems are taxing what shouldn't be taxed and not taxing what should be taxed. This is especially true with regard to inflation. We find that accounting systems may create situations of over- and under-taxation. This can have an impact on other key decision variables such as capital structure, portfolio composition, and other variables. So inflation can create some real problems which are usually invisible in countries with lower inflation. If you apply the correct policy and you know what you're doing, you may create additional real profits. If you apply an

incorrect policy, you may cause a drastic erosion of your real capital.

There are some other real effects of inflation. It affects the sharing of loss between insurer and insured and can also affect the sharing of risk between insurers and reinsurers. Other real effects, which you may be exposed to in this country without being aware of it, are the tremendous effects on loss reserves and the unearned premium reserves in non-life insurance. Small biases in these reserves could drastically affect annual profit figures.

Inflation can bias all calculations and it can bias the evaluation of past performance thus drastically affecting rate-making. It can have a tremendous impact, especially if you're not applying the idea that the rate is reflecting the present value of claims. In non-life insurance in Israel, indexation has been introduced only recently. Policies were formerly sold at lower and lower rates as long as inflation got faster (reflecting the higher inflationary investment income). Rates reached surprisingly low figures. Competition may be very tough because insurance transactions are more and more perceived as financial transactions and thus it pays to sell policies at very low premiums.

The last effect I would like to mention is the real cost to the economy - the cost of uncertainty. Sometimes you have a very high rate of uncertainty in the economy because the rate of inflation is expected to be around 10% but it could be 6% for the next month, or it could be 12%. An erroneous estimate could be disastrous. In other words, most of the problems result from the unanticipated element of the inflation.

I would like to present a simple example of some of the real effects. The example illustrates why you should be aware of calculations in real terms. Assume that we have a firm which has a zero underwriting profit and a zero investment profit. However, its investments are in some kind of indexed bonds which fully reflect the change in the price index (but don't give any real interest). Let's also assume 100% equity financing.

At date zero, the firm starts with an investment of 10 million dollars (market value). Let's also assume that during the next year there is a 10% inflation rate. The end-of-year asset value reaches 11 million - a profit of 1 million dollars. Then let's see what happens over the next year when inflation accelerates to 20% annually. At 20%, the investment value grows from 11 million dollars (remember that we have a fully indexed investment) to 13.2 million. This means a reported profit a 2.2 million dollars or an increase of 120% in profitability. So with 20% inflation, we figure 120% profitability change in nominal terms. What happens in real terms? With conventional calculation, you can see that in "real" terms you still observe very high rates of growth - 83% in this example, whereas the real profit actually remains constant. In other words, common practices of calculating real profits are erroneous.

Let's see what happens when inflation decelerates. Let's say the next period shows only a 10% inflation (after 20% in the previous period). The value of the properties goes up to 14.5 and profit is 1.3. This represents a very drastic decline in profitability in nominal terms - in current prices, declining to minus 41%. The conclusion is that we should be using correct measurement techniques and not biased figures. One has to know what he's

doing with the current figures because otherwise he'll get misleading conclusions.

Secondly, the figures are affected by both the inflation rate and the change in the inflation rate. The U.S. economy is now experiencing some slowing of inflation. The adjustment will have some very interesting effects on the industry which you should think about.

Effects on Capital Structure

The last effect is related to the so-called "Fisher effect" and taxation. The nominal interest rates reflect the real interest rate plus a compensation for the expected inflation. Since taxes are levied on the nominal interest, it means that the tax system taxes paper investment profits. Similarly, a high nominal interest paid by the firm may be tax deductible so that the firm will pay a negative real interest. This means that the capital structure could affect the profitability of the company. You have to be very careful with the conclusions that I'm drawing here because they are correct under certain conditions and completely incorrect, even reversed, under other conditions; but the problem is very interesting. For example, if the firm is financed only with equity but the investment income is taxable (including its inflationary part), the firm will suffer a very dramatic erosion of its capital because the higher investment income (due to inflation) will be taxed but no deduction is allowed to represent the growing cost of equity capital in an inflationary environment. So the firm will end up with a very drastic erosion of its capital.

With full equity financing and when investment income is not taxable (and there are many ways of doing this), the effect will be more or less neutral (the higher investment income will not be taxed but no financing costs will be deducted as well).

With debt financing and when investment income is taxable, the effect will again be more or less neutral.

If, on the other hand, you're financed with debt and you don't pay taxes on the inflationary profits on the investment side, you make a real after tax profit.

You may ask whether all this is relevant for insurance companies since they don't hold debt in their capital structure. If you'll take the view that some of the reserves really reflect a sort of external capital, a sort of debt, you have the same effect. The rate of underwriting loss partly represents the interest payment that the firm is paying for using the external capital.

Using the right financial policy, you can make real profits even during periods of very high inflation. That is the reason why firms are willing to pay 200% interest when the inflation rate is only 100% without getting upset about it. I must warn, however, that these conclusions should not be applied immediately, because they depend very much on the assumptions and predictions as to what's happening in the capital market.

MR. SWAGER: Many actuaries are concerned about taxes since the ACLI sent the stopgap to Treasury. The ability to make quick changes in taxation and having government as a partner in what we're doing is perhaps a little bit farfetched in the U.S. right now, but the idea of indexed bonds is a good one. We spend so much time focusing on what products our agents can sell, what products will make us current income dollars, but Yehuda brings home to me the idea of looking at what is the real growth in our business. The U.S. industry is sitting on billions of dollars of assets. How are we really managing them into the future?

Our last panelist, Fernando Troncoso, has the unique distinction of being one of two people who hold designations in both the Society of Actuaries and the Mexican Actuarial Association. He consults in life and non-life areas in the U.S. and throughout the world. He's going to point out a few practical illustrations of the effects of inflation on the attitudes of governments, peoples, and insurance companies to the phenomenon of inflation.

FERNANDO J. TRONCOSO: In Chile, we see that the government has turned the whole Social Security system over to the private sector. Nowadays, if you want to provide a retirement plan or health insurance for your employees, you have to go to one of the companies approved by the government for this purpose. The government no longer has any responsibility for the social security of the country. This measure was taken last year. Different observers in Latin America feel that it is an interesting experiment, but so far no one can predict if it will work or what kind of results it will have. Time will tell.

After Brazil and Argentina, Peru has one of the highest inflation rates and it is experiencing a continuous devaluation of the sol (the currency of Peru). Every day the sol loses its value against the dollar. This week, the exchange was about 570 soles to one U.S. dollar.

In Ecuador I find a very interesting situation. The government has two forms of exchange. First, if you want to purchase dollars to go abroad, you are asked the purpose of your dollar purchase. If you are going on vacation, the exchange rate is 40 sucres per dollar. If you are purchasing dollars to study, to do import-export business, or to receive medical treatment, then you are sold dollars at the official exchange rate of 25 sucres per dollar. This is a measure taken by the government to prevent the outflow of its currency.

At one time I worked on two projects designed to fight inflation in two different countries. One of them was France. In this case I helped to develop a policy which they called "revalorization" which is similar to indexation, which has already been discussed.

The other country was Greece. Greece had at one time issued what they called the "Drachma Parity". Let's say, for example, that in 1960 the drachma had an exchange rate of 30 drachmas to one dollar. Somebody purchased an insurance policy, whole life for example, for 10,000 drachmas and paid the corresponding premium. The face amount is guaranteed to hold a parity with respect to the dollar as of that date. Assume that 20 years later the person dies and his spouse or beneficiary collects the proceeds. The drachma has had over 100% devaluation in the last 20 years, so instead of collecting 10,000 drachmas, the face amount will be in the amount of dollars at the parity of that day on which the policy was issued, and the

claim is paid at that exchange rate. By this means, people are covered for the devaluation of the currency. An interesting point is that you still make your premium payments in the local currency without increasing the amount of payment because of the devaluation of the currency. I find this very interesting and, of course, if you can hold assets in U.S. dollars you are perfectly covered in this kind of situation.

Some countries allow you to invest in U.S. dollars; some others have restrictions. In South America you have to hold a certain percentage of your investment in local currency and in bonds and securities specified by the government.

Two other countries with which I have had direct business contact are Panama and Puerto Rico. They both have problems similar to the U.S., mainly because they also have the U.S. dollar as their normal currency. In Panama they call it a balboa but when they pull out a bill, it is a U.S. Treasury note.

In Trinidad, they have imposed another device which gives the government some control over the outflow of capital. When you go into Trinidad, you can bring along all the money you want. When you come out, they effectively empty your pockets. If you have U.S. dollars, or any other currency, you are welcome to take them out. However, if you have Trinidad dollars, you're allowed to take out only 20 Trinidad dollars. I do not know if this applies in all cases, but this has been my experience.

Bolivia, to my knowledge, is the most unstable country in South America. They have had about 157 years of independence and right now have their 198th president. With that kind of instability, there is not much interest in investing in that particular country. Talking to insurance executives of some insurance companies, it seems to me that they do not put too much emphasis on inflationary problems. Perhaps this is because there are more urgent problems to solve.

My experience has been different with different insurance company managers. Some are very sophisticated and take many measures to cope with inflation; others just live with it. Some do not even think about it.

These are some examples from my experience. By no means do they reflect what each of these countries is doing right now. They are merely experiences that I had when working for companies located in these countries.

MR. SWAGER: Does anyone in the audience have any hot, burning questions about inflation which you've been dealing with in your company, either in product lines or overall financial management of your operations?

MR. FRANK J. ALPERT: It was not clear from the discussion whether life insurance policies in the countries mentioned have a feature which is particularly pernicious in the United States, namely a policy feature which leads to cash disintermediation. Is this a problem in Mexico and in Israel, and if so, how is it handled?

DR. KAHANE: Indexed policies in Israel are similar to those you have here and therefore they have the option of disintermediation (loans, cash values). However, it does not create a problem since the policies preserve their real value (purchasing power). Thus savers have no urgent need to dis-save. It

used to be a problem prior to the introduction of indexation arrangements in the sixties. In the fifties, we also had a high inflation rate, but indexation was not common. At that time savings were shrinking and many people and many people tried to use policy loans or to surrender the policies. After the introduction of indexation, this was no longer a problem except for some "tricks" (e.g., At one point, indexation was only semi-annual and not monthly, so people took policy loans one day after the indexation day and repaid the loan prior to the next indexation day. They made a lot of money out of these transactions).

MR. HENRY B. RAMSEY, JR. Dr. Kahane, how do you get from here to there? We're sitting here with fixed income investments to a large degree, and the secret to success is indexed investment. What happens between now and then?

DR. KAHANE: I get the impression that you envy our situation. Actually the best way to is try to control inflation. Once you control inflation, you don't face the problem anymore. However, my personal feeling is that right now the unemployment problem is more important than the inflation in this country. Thus, if the choice is between unemployment and inflation, I would prefer to have inflation. I would deal first with the unemployment, disregarding the inflationary effect. If you cannot control inflation, you have to develop such indexed instruments or other instruments to preserve the value of the savings. Otherwise, you will be forced out of business. Most probably, if you don't leave the business voluntarily, the consumer will force you to leave it and you won't be able to attract savings. This means that the insureds will take policy loans, cash values and ruin the business. To prevent that, you have to design other products - indexed policies, variable annuities, universal life or other programs. Such products create a large number of problems like the Securities and Exchange Commission problem (whether you can specialize between insurance companies and other financial services). In order to develop indexed policies you must develop indexed investments (bonds). This can be done by the private sector. It may be beneficial to firms in the private sector to issue indexed bonds or to develop indexed mortgages or variable interest mortgages which are quite similar to indexed bonds.

MR. CHRIS H. MCELVAINE: I have in my possession a copy of an indexing endorsement which is from a company in Argentina. I don't remember the name of the company, but in essence the endorsement provides, on a whole life level premium policy, a quarterly indexation linked to quarterly government treasury bills. In essence, as I understand it, it says that on the quarterly anniversary of that policy, the face amount, the cash surrender value, and the quarterly premium will be increased by a factor which is the difference between 85% of the yield rate on ninety-day government treasury bills and an assumed, I think it's 3%, interest in the premium. It raises some interesting actuarial problems since the premium which is being indexed is the original issue age premium, but I think an analysis shows that that is not as great as one might assume initially. I think the question I'd like to ask is: If the company issues indexed policies of this nature, it presumably means that all of those funds backing it (or the majority of them) must be invested in such assets. If that is so, your presumably whole life long term policy is now basically a short term vehicle. Is either Mr. Huerta or Mr. Troncoso familiar with that approach?

MR. TRONCOSO: My experience with yearly indexation was in developing a product for an insurance company in France. While developing the product, I did not participate directly in the discussions of considering the allocation of assets in either a short or long term investment and I would be just guessing in giving you an answer.

MR. SWAGER: How about an observation based on the United States? Property casualty companies can give us a lesson here. How many years ago was it that we could go to our auto insurance company to buy a five-year policy? Not terribly long ago, but it's difficult now to find a policy that's not repeated every quarter. The investment portfolios and the cash flow analyses that are going into property casualty lines of business are shortening. As I understand you question, you suggest that because we don't have indexed policies in North America, we are using traditional investments of shorter and shorter duration, taking advantage of the inverse investment curve right now. And, in essence, what was traditionally a long-term business is now being funded with short-term money. This means that we are subjecting ourselves to reinvestment risk more than ever before. In trying to answer Hank Ramsey's question, I thought I'd ask Yehuda another question. We have an enormous amount of assets in our life insurance system here, and equally large amounts in our property casualty companies. How do you make a quick conversion? I think, although Yehuda didn't say it this way, that the only answer is "painfully". We are fighting taxation questions; we're being heavily taxed on certain investment income. Bankers might criticize us as an industry by saying we should have anticipated what has happened. We knew what the law was twenty years ago; we should have been cleansing our portfolios all along and putting ourselves in a position to react to the current inflationary system. When you're sitting on so many billions of dollars, it's very difficult to make any quick changes.

MR. EDWARD SCHER: As I understand the indexed bond, the only cash the insurance company receives on the bond is the real rate of interest. It might receive 3% of the face value of the bond and the balance of the indexing is in unrealized write up of the value of the asset. Is that correct?

DR. KAHANE: The insurance companies holding governmental indexed bonds receive the current interest which is indexed. However, both the principal and the interest are indexed. Like any other unindexed bond the principal matures in the very distant future or in instalments. For example, let's say that you have a bond for one year with 5% real interest. That means that a $1,000 bond will be maturing at the end of the year for $1,050. Now, let's say that there is a 100% inflation rate. At the end of the year, instead of $1,050 you'll get $2,100.

MR. SCHER: Are these generally one-year bonds? I was speaking more in terms of the long term.

DR. KAHANE: No, these are very long term bonds, but the same idea holds also for long term bonds (10-40 years).

MR. SCHER: Well then, the forty year bond matures in forty years for some very large appreciate value. What are the interest payments during the forty years?

DR. KAHANE: 5% of the face value every year, paid semiannually, and fully indexed (up to the date of payment). Actually, due to a discount arrangement (disagio), the real interest rate is 5.2%. Pension funds enjoy a real interest of 5.7%.

Some of the bonds mature gradually which means sort of a shrinking fund.

MR. DAVID S. WILLIAMS: I'd like to pursue a question regarding the economics of inflation. My understanding has always been that when inflation is in progress, not everyone can be protected - there have to be some winners and some losers. When you have a high rate of inflation, the losers have to be people who are holding basic capital, whether it's land or homes. I'm wondering what's going to happen over a longer period of time if you have continuing high rates of inflation. Don't you eventually have to have a collapse in some point in time?

DR. KAHANE: It's a very difficult question. We don't intend to have such high rates of inflation forever. However, if the government cannot prevent the inflation due to the tremendous defense budget needs, it may definitely have to face very undesirable long term effects. If we are going to have this long term inflation, we shall probably see the collapse of the capital market because in the distant future the government will not be able to finance the gap between the interest paid to savers and the rate obtained from the investors.

The question of transfer of wealth from one sector to another is also very interesting. If the economy is indexed, you find that the poor people are protected very well because the government indexes Social Security and welfare benefits. The rich are protected because they can hire consultants to find ways to cope with inflation and to make tremendously large real after-tax profits. Actually, they benefit tremendously from inflation (e.g., through tax reform) and this could be one of the reasons why inflation is not being cured - because of these strong vested interests in the preservation of high inflation rates. Those who really carry the burden are the middle class - these people are paying a very heavy toll right now.

MR. WILLIAMS: Isn't it true that any asset that's held in terms of a specific amount in a currency is the one that fails? If you're holding real value items you're all right; if you're holding indexed items you're all rights; but if you're holding anything that has a rate of return or a rate of principal payment that's specified in the currency in specific amounts, you've had it.

DR. KAHANE: Yes, that's right. Nobody holds cash. The rate of turnover of cash in the economy is very, very high. It's a mistake to hold cash for even one week - you lose 2% per week.

MR. SWAGER: Some of the companies that have done the market valuation of their assets to try to figure out what their real outgo would be if they had to pay everything out, be it property casualty or life, are finding portfolios significantly under water.

For the typical property casualty companies, and they're traditionally investing a lot shorter than life companies, portfolios are under water by 40%. I think we're going to see a shortening of the whole insurance

financial structure. We're talking about relatively small rates of inflation in this country and we're making the necessary link between the inflation rate and the investment return. As we do so, we're cutting down maturities to the point where we will be investing only in short-term instruments. We're looking at relatively low rates of inflation and yet high devaluation of our assets. Our current inflation is 12% or 13%. All of a sudden, inflation jumped to 25% in Mexico. What would we do? I was somewhat comforted by the panel that if you have an innovative regulatory and capital market structure in a country, you probably can deal with newly-issued policies insome way, shape or form. But to the extent that you've locked yourself in in the past to long low-yielding investments, it will be very difficult to deal with.

DR. KAHANE: I would like to add a few words to what Dick just said. You know, perhaps, that in the last decade I spent some time on the study of balance sheet immunization, expecially in non-life insurance. We developed an optimization model, which balances the assets and liability portfolios, with the intention of maximizing the profitability for each given level of risk. One of the implications was a model for balance sheet immunization in times of inflation. We studied some of the effects of inflation for U.S. property liability companies (in aggregate figures, to prevent disclosing data of individual companies). We found that insurance companies can be described as holding combined portfolios of risky assets and liabilities. One of the securities is a certain fictitious security which may be called "inflation." This security is held indirectly through the investment portfolios, and the underwriting activities. The amount held depends on the capital structure and on the tax system. We employed a quadractic programming model to find the optimal structure which would optimize the effects of inflation. The objective of the model is to maximize the profitability for any level of risk. I published a few articles on this problem of immunization with specific attention to inflation.* The major result of these studies was that the vulnerability to inflation depends on all these variables - the financial leverage of the company, the tax rate, the investment policy and underwriting policy. The overall vulnerability to inflation was in the range of between 3 and 4 times the inflation rate. That means that if the inflation rate increases by 1%, then the profitability will decrease by 3 to 4 percentage points. For example, if the return on equity is 10% with an increase of 1 percentage point in inflation, the reported profitability will be about 7%. The property liability insurance industry is thus extremely vulnerable to inflation. This is due partly to regulation which forces the insurance company to hold a certain part of their portfolio in bonds which perform poorly in times of inflation. In addition, the underwriting profit also tends to disappear as a result of inflation. In other words, the insurer is being hit by both the investment and the underwriting portfolios. Add to this the taxation effects mentioned above and you find that there is almost no way to win. In order to make a real profit, you have to change your portfolios, you have to change.

*See, for example, N. Biger and Y. Kahane, "Balance Sheet Optimization in Inflationary Circumstances - the Case of Non-Life Insurance Companies," Journal of Insurance Issues and Practices, June, 1977.

your entire attitudes, you have to change your product design. This is the bottom line.

MR. SWAGER: We're already considerably over time. If anybody has any additional questions, feel free. Otherwise, I'd like to thank the panelists and thank you all for coming.