

**EASTERN EUROPE AND THE FORMER SOVIET UNION**

Moderator: CHARLES BARRY H. WATSON  
Panelists: ANDREW F. GIFFIN\*  
GREGORY T. GLASHAN  
ROBERT J. MYERS  
HARRY H. PANJER  
Recorder: CHARLES BARRY H. WATSON

The last few years have brought momentous changes to Eastern Europe and the former Soviet Union. As in all other areas of social and economic life, these present both opportunities and problems in this case for the actuarial profession and the industries it serves. The panel will explore these issues in the light of:

- The background and current situations
- Trends in governmental programs
- Expansion of insurance markets
- Development of employee benefit programs
- Building the actuarial profession: education and research

MR. CHARLES BARRY H. WATSON: Gregory Glashan did appear, but due to mechanical difficulties, his presentation is not available.

MR. ROBERT J. MYERS: My role on this panel is as a long-time observer of economic security programs in what was formerly the U.S.S.R. My first experience was as a member of cultural exchange team of the U.S. Government in 1958 to study economic security measures in the U.S.S.R. Such study included not only the social security program, but also various private programs such as voluntary insurance. Since that time I have made various trips to the U.S.S.R and perused the international literature so as to keep up-to-date on the subject.

One of the most important institutions that have studied is the State Insurance monopoly, Gosstrakh. This organization had a widespread sales force handling not only life insurance of the various traditional forms customary in other countries, but also fire and theft insurance on household goods. The number of life policies in force, which were predominantly endowment, was quite sizeable, running into the millions. However, when information was requested about such basic matters as total insurance in force and total reserves, answers were not given.

One of the basic characteristics of the U.S.S.R. was secrecy. The officials with whom I met were always very cordial, but they would not give out any specific information or views that were not already published. In particular, when questions were raised as to why certain provisions were adopted – such as differing retirement ages for men and women – the answer would be merely that this was what the law provided.

\* Mr. Giffin, not a member of the Society, is Principal of Tillinghast in Boston, Massachusetts.

Currently, people in the former Soviet Union are much more open and frank than previously. However, one should recognize that there undoubtedly must be some more reluctance frequently, even though it is not too apparent, because of the long years of repression of ideas and forthrightness.

Another important aspect of doing business in Eastern Europe and the former Soviet Union is the obvious principle applicable in all foreign consulting work that the visiting expert should not attempt to transport his or her own system to the countries for which consultation is given.

Also, one should recognize that the citizens of the country to which consultation is given are often quite knowledgeable even though they may not volunteer such information. One should recall that the Russians are by no means unaware of insurance principles and practice. For example, the 1915 International Congress of Actuaries was scheduled to be in St. Petersburg (although World War I prevented this).

Also, I saw what appeared to be an excellent book on the fundamentals of insurance, *State Insurance in U.S.S.R. by F. Konshin*. The table of contents of this book (interpreted into English) is contained in my paper "Voluntary Insurance in U.S.S.R.," the *Eastern Underwriter*, May 22, 1959. Some corrections to the text of this article were incorporated in a reprint of the paper in the *Journal of the Incorporated Australian Insurance Institute*, 1959-60.

Actuarial science was by no means nonexistent in the past Eastern Europe. Charles University in Prague had, for many years before World War II, an outstanding course in actuarial science.

Currently, many organizations such as the World Bank and various foundations are literally "throwing money" at the Eastern European countries. This is done by holding conferences and sending visiting teams of experts to these countries to deal with various subjects. There is a tendency to hire economists with little or no previous experience with the actual operations of the particular programs involved. This is apparently being done on the grounds that economists can be experts on any and all subjects. Of course, there have been exceptions to this general situation. In the social security area, many of those who participate in these conferences and visits have had little or no experience in the actual operation of benefit programs, but rather only broad, theoretical knowledge of the subject. In many instances, what is needed is practical advice on how to administer the program to obtain coverage compliance, or how to develop equitable and workable transitions from one benefit provision to another.

Further, because of the banking nature of some of the sponsoring organizations, there is a tendency for the visiting experts to use such social security programs as an economic tool by increasing savings and promoting economic development. As a result, quite often the Chilean privatized social security approach is recommended. However, this is done without realizing the unique characteristics of this system, especially the mammoth amounts of contributions from general government revenues that are currently being made on top of the defined contributions collected.

## EASTERN EUROPE AND THE FORMER SOVIET UNION

MR. ANDREW F. GIFFIN: Under the Soviet socialist system, insurance was provided through government monopolies in the Central and Eastern European countries. Without such market economy basics as costs- or demand-based prices for most of the economic activity, much of the infrastructure taken for granted in insurance operations has not been present over the last 40 or more years. As new market economies are formed, foreign and domestic entities are building new insurance operations. In most cases, foreign insurance expertise and capital are playing an important role.

Development for the former East Germany, the strongest Soviet satellite economy, has been assumed primarily by the former West Germany and its major insurance companies. Hungary, Czechoslovakia, and Poland are the most popular targets for development by other foreign companies. These markets and their initial development experience illustrate the problems and need of this region. The Baltic States of Lithuania, Latvia, and Estonia (populations of 3.8, 2.7, and 1.6 million, respectively) have relied on foreign company joint ventures to reshape state insurers. The other nations, now defined or yet to be defined, have conditions that are less conducive to the development of stable insurance markets in the near future.

This brief presentation outlines some of the basic issues that are shaping the development environment in the region. It also identifies some important contributions that foreign companies and the actuarial profession can make.

Some of the statistics presented here, while useful for broad comparisons, involve estimates of economic activity that are subject to inaccuracies due to a lack of complete records of activity in these markets, rapid changes, and problems of valuation. For example, such basic indicators of economic development as GNP/GDP per capita vary substantially based on source and timing of measurement. Such measures are useful to give relative sense of the degree of development but are unreliable in absolute terms. Further, the degree and rapidity of change in the region makes it difficult to be fully representative of progress. Before business judgments are made about entry potential, a detailed analysis of the underlying economic conditions should be completed, including on-site investigations.

The rapid political changes that have occurred in Central and Eastern Europe since late 1989 have opened a new arena for foreign-market participation by multinational insurers. Distinctions are often made between Central Europe (i.e., the former East Germany, Poland, Czechoslovakia, and Hungary) and Eastern Europe (i.e., Yugoslavia, Romania, Bulgaria, Albania, and the former Soviet Republics). As those in Central Europe consider themselves significantly advanced over their Eastern neighbors, this is important to them. Politically and economically, the distinction appears to be significant. The following comments are directed primarily to the Central European nations.

East Germany, now part of a unified Germany, is dominated in insurance, as in other things, by formerly West German interests. The leading German company, Allianz, began acquiring DVAG, the monopoly East German insurer, beginning with 51% purchased in 1990. It expects to invest well over \$1 billion in development of the company before profits are realized. Other German insurers are developing positions in the East. Some are reestablishing operations in what was once their home base of operations in the East.

There may be some foreign participation in the combined Germany market in the future, but the highly restrictive regulatory system and the strength of the major German insurers have made foreign entry difficult in the West. In the East, non-German entrants must compete not only with regulatory constraints and the economic strength of the German insurers, but also they must counter the determination of the German companies to develop the East for political and cultural reasons beyond economic considerations.

Hungary, Czechoslovakia, and Poland will be profiled in more detail, but in general, Hungary provides a wealth of experience with private ventures, having maintained a significant private sector over the past 20 years. The Hungarian economy has substantially bested the larger Polish economy but lagged well behind the Czechoslovak economy in terms of GNP per capita.

Czechoslovakia, particularly the Czechoslovak Republic, has maintained a relatively high activity level, but has been dominated by state-owned enterprise more thoroughly than Hungary. Czechs have more to work with but less experience in private enterprise.

Poland, with over twice the population of the other two, adds somewhat greater internal political conflict to a shaky economy and only recent additions of private enterprise. Sorting out post-socialist politics is certainly an issue in each country, but Hungary has a history of political flexibility, and Czechoslovakia benefits from a stronger economic position. Hungary, Czechoslovakia, and Poland have attracted foreign insurers in that order. Nevertheless, early evidence of insurance market development confirms the long-term nature of this activity.

The Eastern European countries present a variety of economic and political problems that make them less attractive for foreign investment. Yugoslavia has yet to resolve sovereignty issues among its various regions. The small stable portion (e.g., Slovenia) is not very attractive to most foreign companies due to its small size. Romania and Bulgaria have made a more limited break with their socialist pasts, but some are attempting to begin insurance developments in Romania (e.g., Generali of Italy, which had its Romanian operation nationalized in 1947). Albania has long lived a highly sheltered existence limiting economic potential.

The former Soviet republics are still in the formative stages of creating viable political units and firm boundaries. Lack of market infrastructures and reliable currencies hinder the development of insurance systems. A few foreign companies appear to be primarily interested in positioning for future development, particularly in Russia.

### **HUNGARY**

Hungarian goulash is a Hungarian stew with a variety of zesty tastes and smells. It is an apt description for economic activity in this post-socialist period. Under socialism, various forms of private enterprise were tolerated. Hungarians are accustomed to dealing with a private sector, although much of it came perilously close to the limits of Soviet tolerance. This quasi-underground economy was highly secretive, and that historic condition continues to make the current requirements for foreign ventures unclear.

## EASTERN EUROPE AND THE FORMER SOVIET UNION

Hungary is the smallest of the three Central European countries with a population of 10.6 million and a 1991 GNP per capita of \$9,720 (according to Mintel, the U.K. market research firm). Although an insurance regulatory law has not yet been passed, private insurance companies were formed from 1986 on. Most have involved some foreign investment of capital and technical expertise. The foreign participation is subject to general legal provisions concerning foreign investment in the country.

Recent high levels of inflation (e.g., 35% in 1991) have significantly reduced the value of in-force life insurance and limited the appeal of new sales. Premiums from all lines of insurance only account for 1.8% of GNP compared with 8.8% in the U.S. Life premium accounted for only 0.5% of GDP (Sigma, 2/91). Much of the limited existing life business has been term insurance covering workers and their families, marketed through group contracts with individual purchases at the place of employment.

Allami Biztosító, the former monopoly company that had a portion of its business split off in 1986, has sold most of the life insurance. A controlling interest (75%) was recently purchased by AEGON of the Netherlands for a reported \$50 million. The Hungarian government will retain 20%, and 5% will go to employees.

One of the most prominent foreign participants in Hungary is Allianz of Germany, with 59% of Hungaria, the dominant nonlife company. Staff cuts are planned in 1992 to counter significant losses in 1991 and to become profitable as targeted in 1994.

Generali of Italy had a joint venture with Allami but has since taken over the Weiner Allianz partnership with Providencia through its Austrian subsidiary Erste Allgemeine Generali. Generali has been reluctant to take on former monopoly companies in the East because of problems trying to restructure them. Generali is reestablishing its pre-war position in nonlife insurance. The joint venture operation sells through the Hungarian Post Office Bank.

Several new companies, foreign owned or partially owned, are entering the life market. Foreign interests represented include the German Colonia, the French GAN, and the Dutch Nationale Nederlanden, and the American AIG, in addition to those already mentioned.

The new entrants are taking advantage of demands from employers for pension supplements and other benefits to encourage employees to maintain their employment. Public pension and welfare benefits are currently limited. GAN and Nationale Nederlanden have taken particular interest in the life market for this purpose. AIG has established a joint venture to sell life insurance and personal lines through the Cooperative Savings Bank. By June 1992, an estimated \$500 million had been invested by foreign companies in the Hungarian insurance market.

The ground rules for these ventures are not very clear, there not being an insurance law to spell them out. A commercial attaché of one of Hungary's Western European embassies advised a prospective foreign insurer to "go find out." The new law, expected out this month (October 1992), should begin to clear the air.

Opportunities in Hungary depend primarily on broader market expansion. Significant advantages of established private enterprise infrastructure must be matched with progress on economic development and control of inflation. Despite some history of private enterprise, Hungary suffered a significant decline in GDP in 1991 (10-20%). Problems with public budget management have made matters worse.

Hungary has faced a variety of political and economic setbacks over the years. Its people have developed much experience in reacting to rapid changes in conditions and fortunes. Conditions such as the recent Soviet domination have driven much of this reaction underground. Success in Hungary requires an understanding of what goes into the often obscure "Hungarian goulash" of economics and politics.

### **CZECHOSLOVAKIA**

Of the 15.7 million inhabitants, 11 million live in the more prosperous Czechoslovak Republic. Prior to World War II, Czechoslovakia had one of the strongest economies in Europe. During Soviet controls, a relatively high level of economic development was maintained compared to its Central European neighbors. Czechoslovakia had the highest 1991 per capita GNP in the region at \$13,500 (Mintel). In 1989, life insurance premiums as a percentage of GDP were 0.79%, compared with Poland's 0.09% and Hungary's 0.05%. Overall insurance premium penetration in Czechoslovakia in 1989 was 2.98%, compared with Poland at 0.51% and Hungary at 1.76% (Sigma, February, 1991).

New insurance laws were passed in the Slovak Republic in December 1990 (effective March 1991) and in the Czechoslovak Republic in April 1991 (effective May 1991). The legislation ended the state monopolies and set a rapid course for opening the market to new entrants, particularly foreign insurers. The Slovak law limits foreign ownership of insurance companies to 25% until two years after the effective date of the law, and the Czechoslovak law limited foreign ownership to 45% until one year after effectiveness (i.e., May 1992). These basic laws will be fleshed out through further legislation and regulations as the private market begins to take shape.

Under the socialist regime, there was only one monopoly company. In 1969, the company was split into two companies, one for each republic. Two additional companies were recently authorized in the Slovak Republic. All are composite life and nonlife companies.

Generali had established a relationship with the Czechoslovak national company, CSP, but will establish a separate operation. Nationale Nederlanden has also entered through a new company as the first wholly owned subsidiary licensed for life insurance. NatNed began operations in June 1992 with individual life and pension business sold through a network of 100 agents. AIG became the first American entry recently, with a license for both life and nonlife business.

Life insurance business has been limited because the state has provided for basic pension and welfare needs for the past 40 years. However, prior to World War II, there was an active private market for life and health benefits. This relatively limited history of public benefits makes transition to more private benefits easier than in countries with longer dependence on public systems.

## EASTERN EUROPE AND THE FORMER SOVIET UNION

Economic systems in Czechoslovakia have been heavily dominated by socialist methods. However, public acceptance of socialist ideas was more limited. Prague, one of the few European cities not heavily bombed in World War II, retains an old-world flavor that symbolizes Czechoslovakia's cultural resistance to Soviet socialism. Czechoslovakia suffered a sharp drop in GNP in 1990-91, similar to those in Hungary and Poland. But, the need for broad-scale restructuring of the economy is not as high as in Poland.

CSP had about six million life policies in force in 1991, typically in small denominations. Most of these came from payroll deduction endowments. Most of the individually sold contracts represent savings for children, including provisions for annuities in the event of the death of a parent. As state pensions leave increasing gaps at higher income levels, a limited market for individual pension supplement contracts has developed.

Although not as high as its neighbors, Czechoslovakia has suffered significant inflation in the past two years. Inflation in 1991 was about 50%. A major part of the increase in 1990-91 was a rise in heating fuel costs resulting from the loss of highly subsidized Soviet fuel. In response to the high inflation, CSP revalued its in-force policies to avoid heavy lapsation but does not anticipate the need to index policies to inflation in the future.

CSP is in the process of privatization. As the only potential Czechoslovak insurance joint venture partner available, CSP has had many visits from Western companies. The Czechoslovak government is in the process of selling off nearly 1,500 state-owned enterprises through a voucher and bidding plan. A major limitation for any foreign acquirer would be the overstaffing that is common in the state enterprises.

Czechoslovakia has the economic wealth and growth potential to support a much larger life market but lacks significant infrastructure requirements. Personnel resources are limited, and operating systems are primitive. There is no private pension law and no tax relief in life products. The pace of market development will depend on how and when these infrastructure issues are addressed.

### **POLAND**

With a population of 38 million, Poland is the largest of the Central European countries. At \$6,300 1991 GNP per capita (Mintel), it is well below both Hungary and Czechoslovakia. As with Czechoslovakia, its economic potential is hampered by the lack of formal private-enterprise infrastructure. Conflicts among political parties within the parliament, and between the parliament and the executive branches of government, have hindered development progress.

Poland has taken an aggressive approach to structural economic reform. Many economic controls were eliminated in January 1990. Since then, much new economic activity has been generated. At the same time, much of the old structure has been dismantled. New infrastructure building is largely in the "informal" sector, formerly the black market. Capital generated in the underground economy is fueling much of the current economic development. Foreign investment, mostly from Germany, has concentrated on small business development with over \$900 million in 1989. But, the overall short-term effects have been a 20% drop in recorded GNP

## RECORD, VOLUME 18

since 1987 and unemployment rates of 18.2%, compared with 0.6% in 1990. Much of the difficulty has been changing the larger state-owned enterprises to fit the new market environment.

A new insurance law was passed in July 1990, and regulations have recently been issued under the law by the Ministry of Finance. The monopoly position of the state company, PZU, was broken up with the addition of a Polish life company, Westa Life (1988), and the recent authorization of joint-venture companies -- AIG and the state bank, PKO, and AGF with Solidarity. Entry was permitted through joint venture and, after January 1, 1993, directed by foreign companies.

High levels of inflation have significantly reduced the value of PZUs in-force business. Although pressure has been put on the government to increase in-force policy values, PZU is not in a position to make material additions. This experience with PZU and general economic problems will retard development of a life insurance market.

Although the new insurance law and regulations have helped to provide a framework for development of private insurance markets, further legislation is needed for pension, tax treatments and foreign investment regulation. Unlike the flexibility available in Hungary, Polish legal tradition requires clear parliamentary authorization for various details of private market activity.

The very limited life market is still dominated by PZU. In 1990, life premiums were \$50 million for PZU and \$2 million for Westa Life. Most of the business is group term life sold through employers to individuals on a payroll deduction basis. Of the very limited individual business, most is savings for children payable at age of majority or at marriage.

New business is extended to inflation through a process of adjusting monthly premiums to reflect inflation changes. It is not an automatic process. Premiums, reserves, and cash values move together in the revaluations. Sale of contracts based on foreign currency is being considered, but local currency contracts remain more popular because interest rates on local currency accounts tend to give better yields compared with foreign currency accounts, after depreciation is accounted for.

As are many sectors of the Polish economy, the insurance sector is in the process of privatization. The Polish privatization scheme involves vouchers issued to Polish adults for a nominal fee to acquire shares in pooled investment plans. Professional investment managers representing the investment plans are to bid for public entities and are expected to apply pressures for restructuring and efficiency. Political disputes over the methods and pace of privatization has slowed the restructuring of the public sector.

The government is providing rules that favor foreign investment in the insurance sector. Attractiveness of the market will depend more on the attainment of political and economic stability. Still bearing the weight of its socialist past and not yet having established clear political and economic direction, Poland is considered fragile, limiting enthusiasm for significant investment.



### **REGULATION AND SOLVENCY PROTECTION**

As the Central and Eastern European countries formulate their policies for regulation of insurance and other economic matters, there appears to be a general intention to make these policies consistent with the approaches being developed within the European Community (EC). The foreign companies most active in developing ventures in the region are from the EC, and the European Commission has been active in making the suggestions to the Central and Eastern European governments on appropriate policies. The EC approach to insurance regulation concentrates on prudential regulation and promotes open competition on rates and contract terms.

In the U.S., the basic insurance supervisory issue of capital adequacy is receiving much attention. Market conditions have raised public doubts about the financial integrity of insurance companies. The adequacy of the traditional state system of solvency supervision is in serious question.

In the midst of this crisis of confidence, regulators, rating agencies and companies are developing improved methods for measuring business risks and related capital requirements. Although the market environments in Central and Eastern Europe present different risk profiles, the techniques being developed to measure capital adequacy in the U.S. could help Central and Eastern European regulators and companies to address potentially destabilizing market conditions.

### **CAPITAL ADEQUACY MEASUREMENT TOOLS**

Solvency supervision of insurance companies involves various activities, including statutory accounting standards, investment rules, evaluation of financial reports, field examinations, and others. For purposes of this presentation, consideration is limited to standards of adequate capital.

In the U.S., the amount of capital maintained by an insurance company depends on standards applied by regulators, standards applied by rating agencies, and standards adopted internally by company managements. For consistency and administrative ease, regulatory standards correctly rely on broadly applied rules of thumb.

#### **Static Risk-Based-Capital Formulas**

Individual companies, rating agencies, and the NAIC are currently refining static risk-based-capital formulas to help establish improved capital adequacy standards. Risk-based capital is a calculated amount of capital required to account for specific business risks. The concept has been around for some time. (See for example, Spencer L. Kimball, Chapter 6 Capital and Surplus Requirements, *Insurance, Government and Social Policy*, Richard D. Irwin, 1969.) Risk-based-capital adequacy standards have been applied in the banking sector through the international Basle Accord, adopted by the Group of Ten Central Governors.

Static formulas apply percentage factors to individual assets and liabilities to account for the various risks associated with them. For example, no capital is required as security against the potential loss in value of government-issued or guaranteed securities, as the risk of loss is considered insignificant. However, increasing percentages of assets are required as investment gradings drop.

Factors are also applied to liabilities through percentage factors applied to reserves, premiums, and other items associated with each line of business a company writes. These factors account for the risk that prices charged for insurance will not be adequate to cover all claim and expense costs.

Static formulas are now being evaluated by the NAIC for use in regulatory supervision. The formulas can be applied to readily available annual statement data and can be applied uniformly to all companies. They reflect basic company differences in asset portfolios and mix of business. Thus, they are far more particular than broad capital to premium or capital to asset ratios previously used.

However, the administrative convenience and consistency means that the factors do not account for the special circumstances of each company. Further, because the factors are normally added together, there is no recognition that risks in one line of business are offset by contracyclical risks in another line.

The static formula approach takes a reading as of a particular reporting date. Long-term trends, which can be expected to change capital requirements, are not reflected. Thus, capital may be adequate as of the reporting date but may become inadequate soon thereafter for predictable reasons.

Static formulas have been developed within the insurance industry to provide target capital levels for going-concern companies. The results represent capital levels that would cover ranges of normal variations in asset and liability values, based on recent experience. Target levels are normally expected to exceed capital levels below which regulatory intervention would be appropriate.

At the same time, as going-concern measures, they do not address "run on the bank" conditions or other special circumstances of companies known to be financially troubled or subject to regulatory conservation. Such additional risks require separate consideration.

#### **Dynamic Risk-Based Capital**

A dynamic approach to risk-based capital projects the cash flows of a particular company, including expected new business, over a period of years. Alternative scenarios (e.g., various interest-rate patterns) are used to test the vulnerability of the business to historic patterns of adverse experience. Capital requirements can be determined from the dynamic approach by determining the capital required to withstand losses that would arise from the worst-case scenario, or something approaching the worst case.

Dynamic testing has the advantage of being more specifically relevant to each individual company. By estimating cash flows for each line of business, contracyclical factors (i.e., risk covariance) is taken into account. Because the projections cover a period of years, changes in capital requirements are demonstrated year to year.

Of course, dynamic testing requires a company model and good data to provide a useful result. Few regulators are equipped or staffed to perform such analysis. Regulators have to rely on companies or actuarial advisors to provide such analysis, subject to particular methodology standards.

## EASTERN EUROPE AND THE FORMER SOVIET UNION

The long-term nature of life insurance and some general insurance lines of business makes dynamic testing particularly important. Readings, as of particular reporting dates, reveal little of expected performance in these lines.

Some question the use of projection models for determining capital adequacy because they depend on assumptions about future economic behavior. Yet, companies base their pricing and internal reserve estimates on such projections. Dynamic risk-based-capital analysis uses the same modeling methods.

Dynamic testing is being used by company managements to evaluate their own capital positions. Regulators are requiring or encouraging such tests in some cases. The method has also been used by regulators where serious financial problems have required more detailed analysis.

### **The Appointed or Valuation Actuary**

The U.S. has traditionally relied on uniform state laws on valuation to assure adequate reserves for life insurance. Built-in conservatism has provided some solvency protection. More intense competition and wide product variations demand a more flexible and dynamic approach. The move to actuarial certification of reserves, including consideration of assets, has introduced more professional judgment into the process.

The U.S. "valuation actuary" has a more limited role than the U.K. appointed actuary. The U.K. appointed actuary has a continuing responsibility to consider the adequacy of capital to support new business plans of the company, as well as reserves for existing business. The U.K. Department of Trade and Industries, the supervisory authority, is becoming more active in reviewing prospective business plans, including the adequacy of capital to support them.

The U.S. state supervisory authorities have also adopted rules requiring certifications of financial statements by independent accountants. Increased reliance on professional certification by both accountants and actuaries allows regulators to place much of the burden of capital adequacy measurement, and other solvency supervision analysis, on the companies and professional actuaries and accountants.

### **Risk Monitoring and Management**

Risk-based-capital analysis does more than establish standards for capital adequacy. Initially, the analysis requires the identification and quantification of specific risks associated with each line of business. Thus, the analysis provides a risk profile for each line of business and, when the lines of business, assets, and other factors are assembled for a company, a risk profile for each company.

It is not practical for insurance supervisors to understand the risk profiles of each individual company in detail. However, the solvency surveillance process can be strengthened where the regulators use risk-based-capital analysis to improve their understanding of the evolving risk patterns in particular lines of business. Regulators must channel their limited resources where there is the greatest exposure to insolvency. Analysis of line-of-business risk patterns help to identify the lines of business with the highest risks and the aspects of each line of business that create the most risk for that line.

Even with a sound appreciation for risks in the insurance industry, regulators cannot maintain current knowledge of all the threats to solvency for each company. They must rely primarily on the efforts of company managements to monitor risks and manage them effectively. Thus, although official standards may rely on static formulas to establish broad minimum standards of capital adequacy, regulators can further protect themselves by encouraging companies to apply dynamic and other more detailed testing through the certification process.

#### **APPLICATION TO CENTRAL AND EASTERN EUROPEAN MARKETS**

Central and Eastern European countries are working to establish new competitive markets and new supervisory authorities in an environment where much of the basic infrastructure must be built anew. In addition to the normal business risks associated with insurance, the region faces various manifestations of economic instability. The potential for spikes in inflation and wide variation in demand for insurance products and services must be anticipated.

These conditions make it more difficult to apply risk-based-capital analysis techniques. Yet, they also make the need for effective capital adequacy measurement more acute. The future of the insurance industry depends on public confidence. The companies and the regulators need effective tools for anticipating solvency-threatening conditions so that they can respond to changes in conditions as they occur.

The U.S. experience has illustrated the complexity of capital adequacy determinations for the insurance business. Prior focus on liabilities has been broadened to include the interplay of asset and liability risks. Central and Eastern European countries face all these risks, plus those associated with the reorganization of their economies.

Several large multinational insurers have entered, or have expressed intention to enter, these markets. They have an interest in establishing reliable regulatory standards. If capital requirements are set too high, they will have less incentive to invest. If the requirements are set too low, they will be subject to indirect damage from the failure of undercapitalized competitors.

Many of these companies are generally familiar with risk-based capital and cash-flow testing methods that are described here. Through skillful application of these methods, they can not only protect their own investments, but also help regulators to establish reasonable standards and methods of financial surveillance.

MR. HARRY H. PANJER: The previous speakers have provided a thorough background on developments in Eastern Europe and the former Soviet Union with respect to changes in government programs and expansion of insurance markets.

As countries in Eastern Europe return to economies based on capital markets, professions that are well-known in the West will be duplicated in these countries.

The actuarial profession, in particular, is becoming organized in Poland, Hungary, Bulgaria, Russia, Czechoslovak and Slovak Federal Republics, Ukraine, Latvia, and Lithuania, among others. I have had the opportunity to visit Eastern Europe this year and to teach in an actuarial program in Poland. I will talk about developments in each of the countries that I have just mentioned. Although I have not been to all of these

## EASTERN EUROPE AND THE FORMER SOVIET UNION

countries personally, I have obtained information on the development on the actuarial profession in each from Mr. Chris Daykin, Government Actuary of the U.K., from Professor Krzysztof Stroinski of the University of Western Ontario in Canada, and from Dr. Gabor Hanak, Secretary of the Hungarian Actuarial Society.

### **POLAND**

Poland is a country with a population of about 38 million. Of these people almost 2 million live in Warsaw. The working population is about 16 million employed persons and about 2 million unemployed.

Like most Eastern European countries, Poland is gradually privatizing its state enterprises and entering joint-venture relationships. The number of joint-venture companies increased from 1,600 in 1990 to almost 5,000 in 1991. A Ministry of Ownership Changes is responsible for the change of state enterprises to private ones. All Polish citizens are being given the opportunity to invest in these companies through National Investment Funds.

Inflation has been a problem in Poland. It was about 250% in 1989, about 700% in 1990, and down to about 70% in 1991. There are 87 banks operating in Poland, including 6 with the participation of foreign capital and 2 foreign bank branches.

A stock exchange was established in June 1991. At present there are 13 stocks quoted with an additional 4 to be added soon.

There are now about 24 insurance companies listed in Poland. Of these 5 are life insurance companies and 19 are property and casualty insurers. Three of the five life insurers are companies with foreign capital participation. Not all companies are yet writing business; but, recently licensed companies will be writing business in the near future.

Professor Krzysztof Stroinski, a Polish emigre was most instrumental in establishing an actuarial teaching program at the University of Warsaw in 1990. The teaching program ran over the summers 1990-92 and is expected to continue in the future. The students in the program were primarily from Poland, although some of the students were from Russia, Lithuania, Latvia, and Hungary. The 18 instructors in the program in 1992 came from Canada, the United States, France, the United Kingdom, and Germany. The program is designed to take students through material roughly equivalent to the Associateship exams of the Society of Actuaries as well as through a number of practice-related topics, including professionalism. These practice-related topics cover all areas of actuarial practice including investments.

All 12 students completing the first year of the program in 1990 were subsequently employed by insurers, the government social security system, and the regulatory authorities. As a result, in the second and third years of the program, these students brought a strong practical background to the classroom. With this practical experience, and with a strong mathematics and economics educational background, the students made the classroom experience a pleasure for the instructors. Students frequently brought to class practical problems they were dealing with in their companies. As you can imagine, these included problems associated with high inflation.

The program at the University of Warsaw established by Professor Stroinski is funded primarily by the Canadian External Affairs Department and the Polish Ministry of Finance although there are a number of other sponsors as well. As a result of this program, an actuarial society has been established. The Polish Actuarial Society was formed on August 3, 1991. Professor Stroinski was elected its first President. It has 42 members of whom 3 are Fellows and 13 are Associate members. The Society is now giving exams for students. There will be an exam sitting in November 1992. The exams will be similar to those of the Society of Actuaries although at the early stage of the Society's development they are not able to offer nearly as many courses as we do in the Society of Actuaries.

The first students through the Polish exams are for the first time setting exams for students early in the program. This is in the spirit of the volunteerism that exists in our own Society of Actuaries.

In addition to the summer school in Warsaw, a number of seminars have been run in Poland that have been on actuarial aspects of life insurance and nonlife insurance. They have frequently been sponsored by the Institute of Actuaries of the U.K. and various British government programs.

In addition to the training being provided in Poland, a number of Polish actuarial students working in the insurance field are gaining experience in companies and universities in other countries.

The Polish Society of Actuaries is already working with the Ministry of Finance of Poland in establishing new regulations governing various aspects of insurance. The Polish Society of Actuaries will, no doubt, become a significant professional body and play a key role in the future developments in insurance and pensions in Poland.

An article about the Polish program is published in the January 1992 issue of *The Actuary*.

## **HUNGARY**

There have been similar developments in Hungary in recent years. The University of Budapest organized within its Economics Department an Institute for Insurance Research. Contact was made with the Institute of Actuaries of the U.K., and some training courses in insurance and pensions were organized. The introductory course in the role of actuaries was run in January 1991 in Budapest by the Institute and the Faculty of Actuaries. Following the initial seminar, subsequent lectures and seminars were organized by the Institute. These seminars were so successful that a diploma program was organized to run over the period from September 1991 to April 1992. Lecturers were from the United Kingdom and financed by the British Know-How Fund. Written material was provided in English and translated into Hungarian. The course leads to a diploma from the University of Economics in association with the Institute and the Faculty.

The Hungarian Actuarial Society received its charter on February 27, 1991. The Hungarian Actuarial Society has already established a tradition of an early summer three-day symposium each year and a New Year dinner for its members. There were 36 founding members in the Society, and new members are being admitted as

## EASTERN EUROPE AND THE FORMER SOVIET UNION

students pass through the diploma program. The Hungarian program was largely driven by the efforts of Mr. Chris Daykin, Government Actuary of the U.K. As a result of his extraordinary efforts in Hungary, Mr. Daykin was elected as the Hungarian Actuarial Society's only honorary member at its March 1992 general meeting. The Actuarial Society has established an office in Budapest. It is now in the process of developing an actuarial library. A number of contributions have come from the U.K. The Hungarian Society is interested in obtaining additional material from North America. In particular, it would like to get a complete set of the *Transactions* of the Society of Actuaries as well as textbooks that we use. If any of you are interested in making a donation, or know of anyone who could do so, please let me know.

There used to be a flourishing insurance business in Hungary before World War II. After the communist takeover, insurance was nationalized into one monopolistic company. Insurance was not a business in the sense of a market economy; it was considered as part of the state budget. If premiums exceeded claims and expenses, most of the surplus was taken by the state; if there was a loss, the state made up the difference. Reserves were not actuarially calculated.

In 1986 this company was split by a government decree. One part inherited the life side, the other the motor business. Since 1987, 11 new companies have been given approval, and nine have begun operation. The new companies have either 100% or majority foreign shareholders while the two big old ones have been privatized with a Dutch (75% of shares; life business) company and a German (59% of shares; nonlife business) company. Foreign capital in the insurance field comes from Germany, Austria, Italy, the Netherlands, France, Belgium, and the U.S. Most of the companies operate as composite ones, there is one life only and some nonlife only companies.

There are all sorts of policies in the market offered by the companies. On the life side, there are term, whole life, endowment, (deferred) annuity, and other types of policies both with and without profit participation. On the nonlife side, there are compulsory third party, comprehensive, household, property, and other policies. Some companies offer group policies as well.

At the moment, there is no law governing the insurance business in Hungary, although preparations of a draft began some two years ago. Most regulations are decrees of the government or the Minister of Finance. The Hungarian Actuarial Society has been active in commenting on proposed legislative changes affecting the insurance and related fields. A new law governing insurance is due soon. Most actuaries and other professionals in the insurance field are hoping that the legislation will be similar to that of the EC, its western neighbors.

### CZECHOSLOVAKIA

The insurance markets were scheduled to open in 1992 in the Czechoslovak republic and in 1993 in the Slovak republic. With the recent proceedings to separate the two republics, this process may be slowed down. However, the development of an actuarial profession in Czechoslovakia is moving forward. In February 1992, the Institute and the Faculty of Actuaries ran a five-day introductory seminar in Prague on the role of actuaries. The subsequent seminar with lecturers from the U.K. Government Actuary's Department was held in March 1992 for deputies from the Social and Cultural Committee of the Federal Assembly of Czechoslovakia.

Discussions are continuing regarding the formation of a professional actuarial body. Meanwhile, an undergraduate degree course in actuarial science has started at the Charles University in Prague following assistance and advice from the University of Hamburg and the Catholic University of Leuven in Belgium.

In Czechoslovakia, an extensive program of social security has begun, and the formation of private pension schemes is being encouraged. This will, undoubtedly, lead to demand for actuaries in the pension field, as well as in the insurance field.

#### **THE FORMER U.S.S.R.**

There are interesting developments also occurring in the former states of the Soviet Union. In Siberia, an actuarial society was formed in the summer of 1991, partly influenced by contacts with Hungary. The Siberian Actuarial Society has as its president a professor of mathematics at Kemerovo State University. The organization has members from various insurance companies in the Siberian region.

Representatives of the Siberian Actuarial Society visited the U.K. in March 1992. Also, a three-day meeting was held in Kemerovo of actuaries from the U.K., members of the Siberian Actuarial Society, insurance company executives, and others interested in the insurance industry and in actuarial science. The three-day meeting was in the form of a course. All of the materials in the course were translated into Russian.

Two members of the Siberian Actuarial Society attended the summer school program in Warsaw this past summer. Their costs in Warsaw were being met by the International Promotion and Educational Fund of the International Actuarial Association. These funds are provided by member associations in different countries. The Society of Actuaries committed \$50,000 toward this fund at its June 1992 meeting following the creation of the fund at the International Congress of Actuaries.

Also in Russia, discussions have taken place between actuaries from the U.K. and persons in charge of insurance companies in Moscow. In addition, discussions have taken place with the State University of St. Petersburg where it is expected that an Academy of Insurance and Audit will be soon established. There is also a possibility of establishing an insurance college in Moscow.

Plans are already in place to have a diploma program run by British actuaries at both St. Petersburg and Kemerovo starting in 1993. The courses would be similar to that run at the University of Economics in Budapest that I mentioned earlier. It is expected that 20-30 students will attend each course and that most will be currently working for insurance companies. In preparation for this, a number of actuarial textbooks are being translated into Russian.

Although no formal profession has been established in Latvia, Lithuania, and the Ukraine, representatives of those countries attended the Warsaw summer school program, and it is likely that professions will soon be established there as well. The Association of British Insurers has had discussions with the relevant authorities in the Ukraine, and there are some possibilities of developments there.

In Russia, insurance is already making rapid strides; but, it is not well-capitalized, and investment opportunities are limited. Although individual life insurance is quite limited,



## EASTERN EUROPE AND THE FORMER SOVIET UNION

there is a ready market for group products. There is considerable interest in the development of insured vehicles for personal pensions and in pension funds more generally.

Data collection on health care is sophisticated in Russia, and there are good prospects for rapid development of health products. However, the hospital system is not yet equipped to accept payment for services.

Automobile insurance is widely written and well-understood. Low capitalization levels present serious problems for the writing of large risks such as credit insurance and large liability risks. Local reinsurance companies are being formed and foreign reinsurance participation is being contemplated.

Property insurance is not a significant market yet as there is little privately owned property. However, with growing private businesses and farms, this is a growing class of insurance.

Regulation is a major problem in Russia. A new insurance law is expected to be passed this fall. This law will allow regulators to supervise the more than 800 companies that have been formed since the breakup in 1988 of Gzsstrakh, the state monopolistic company.

### **BULGARIA**

Another country in which links have been established with actuaries in Western Europe is Bulgaria. The Laboratory of Mathematics in the Academy of Sciences in Sofia has established an Academic Links Unit with the Department of Actuarial Science and Statistics at the City University in London. Agreement has been reached in principle with the Academy of Sciences to run a one-year diploma program there starting in September 1993 with a one-week introductory course to be run in December 1992 by the British Institute and Faculty of Actuaries.

### **THE FORMER YUGOSLAVIA**

Although the former Yugoslavia is currently in a state of civil war, links with Yugoslavian actuaries have been established by the Swiss Actuarial Association. In addition, Croatian representatives have approached the British Institute of Actuaries about developing an actuarial training program.

It can be safely assumed that nothing will happen while the current hostilities persist.

### **SUMMARY**

Although there are many differences among countries, there are some common problems. The first is a general absence of a market-economy culture and business expertise. The second is the lack of investment opportunities due to the slowness of the privatization of property and enterprises. Third, high inflation rates are rampant in many countries. Finally, the rapid rate of change of all economic aspects of society are putting enormous pressure on individuals, institutions, and governments. The futures of many economies in Eastern Europe remain uncertain. The problems are immense.

## RECORD, VOLUME 18

In spite of these problems, the actuarial profession is developing at a remarkably rapid rate. Enormous credit is due to the British Institute and Chris Daykin, in particular, who has personally negotiated training agreements and raised funds to sponsor programs. Similarly, Dr. Stroinski, almost single-handedly, spearheaded the redevelopment of the profession in Poland.

The Society of Actuaries has committed \$50,000 to the International Promotion and Education Fund. I do not contemplate that the Society of Actuaries will play a major role in Eastern Europe. However, it can certainly support both present and future efforts of West Europeans in Eastern Europe.