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INSURANCE AND REINSURANCE IN RISK DESASTER MANAGEMENT

Abstract: Managing the losses resulted from disaster events is a challenge for every country. There are several traditional forms of risk management from loss control to loss financing and insurance is one of them. But in case of disasters, insurers often require partnerships between governments, individuals, and international donors. This chapter will briefly review some concepts regarding the risk management; will analyze the kinds of risks transferred through insurance; how the insurance mechanism is dealing with disaster risk; and which are the alternatives available to insurance market to cover catastrophe losses. At the end of the chapter, several case studies demonstrate the way by which insurance market deals with disaster risk.

Key words: disaster, risk, hazard, insurance, reinsurance, developing countries

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INTRODUCTION

The insurance sector is one of the pillars of the financial services sector, along with the banking and securities sector. It plays a key role in economic development of a country. Insurance companies foster a more efficient capital allocation. They are a potential institutional investor in financial markets, because a great deal of the premium volume is invested in local and international capital markets. Also, insurance is a practical method for handling the risk, especially the pure risk. Through insurance device, the pure risk is tranferred to insurer; the insured is indemnified in case of loss; the loss of the few is spreading over the whole group so that average loss is substituted for actual loss; and the risk is reduced by applying the Law of Large Number, by mean of which insurance companies predict the future losses with greater accurancy.

Our discussion in this chapter relies on the use of insurance as a risk management technique to cover the losses resulted from natural disasters. Before analysing the several methods used to deal with risk, the first section of the chapter review some of the essential concepts regarding the risk and risk management, such as risk, probability, peril and hazard. The next section analyses the types of risk transferred by insurance mechanism. Section three describes the ways by which insurance market deals with disaster risk. Characteristics of insurance schemes related to disaster management in several countries are described in the fifth section. In order to give an overview of the developement of insurance market, especially in Western Balkan countries, an annex is attached to the chapter.

1. RISK MANAGEMENT PROCESS

1.1. Risk definition

At a glance, risk seemed to be a very simple notion. When there is a risky situation, one may think that there is the possibility of a loss or an unpleasant outcome. The financial literature provides several definitions of risk. Cambridge Dictionary defines the risk as "the possibility of something bad happening, or something bad that might happen". Oxford Dictionary defines the risk a situation evolving exposure to danger. According to PRINCE2 Glossary term, risk is a set of events that, should they occur, will have an effect on achieving the project objectives. Risk is defined in different ways depending on the field or the purpose of use. For example, the Business Dictionary, in general defines the risk as the probability or threat of damages, injury, liability, loss, or any other negative occurrence that is cause by external or internal vulnerabilities, and that may be avoided through preemptive action. But also, it provides several definitions regarding the studying filed, such as finance, insurance, securities trading, food industry, workplace ect. The insurance literature provides different definitions of risk, too. However, in general risk has been defined in terms of two elements: uncertainty and the loss. Therefore, in insurance *risk is defined as uncertainty concerning the occurrence of a loss*.

The risk can be perceived in two ways: objectively and subjectively. The objective risk is statistically measured. It is defined as the ratio of relative variation of actual loss from excepted loss, to expected loss. For example, suppose an insurance company insures 100.000 houses against fire. According to the calculations it expects that about 200 houses will burn on average each year. The word "average" makes the difference. The actual

number of burnt houses may be from 190 to 210 houses, or it may be from 170 to 230 houses. In the first case the objective risk is 5%, while in the second case it is 15%. This means that the second case is much riskier situation for the insurance company.

The subjective risk is defined as uncertainty based on a person's mental conditions or state of mind. It can not be measured statistically and may be perceived in defferent degree by different individuals. It depends on the personal attitudes of the individuals toward the risk. Different attitudes of people may be as result of age, gender, education, culture, personal experiences, information ect. High subjective risk produces very concervative conduct and low subjective risk tends to produce less concervative conduct.

1.2. Risk versus probability

In general individuals wrongly use the term of risk and probability instead of each other. It is necessary to distinguish between the risk and probability. As risk, probability may be objective and subjective. Objective probability refers to the long run chance or frequency of a loss. For example, the probability of head in a coin flip is 50%; or the probability of drawing a "Queen" out of 52 playing cards is one-thirteenth. The probability cat not always be measured so easily (a priori or by deductive reasoning). The probability that a person will be disabled before the age 60, cannot be "a priori" measured. Insurers can calculate this probability by using the inductive reasoning based on the past disability experience. Subjective probability is the personal estimation of an individual regarding the chance of a loss. Due to the low level of statistical knowledge or their superstition degree, people may overestimate or underestimate the chance of loss or profit. In the above-mentioned example, the probability of fire was 2%, but the objective risk was 5% in the first case and 15% in the second case.

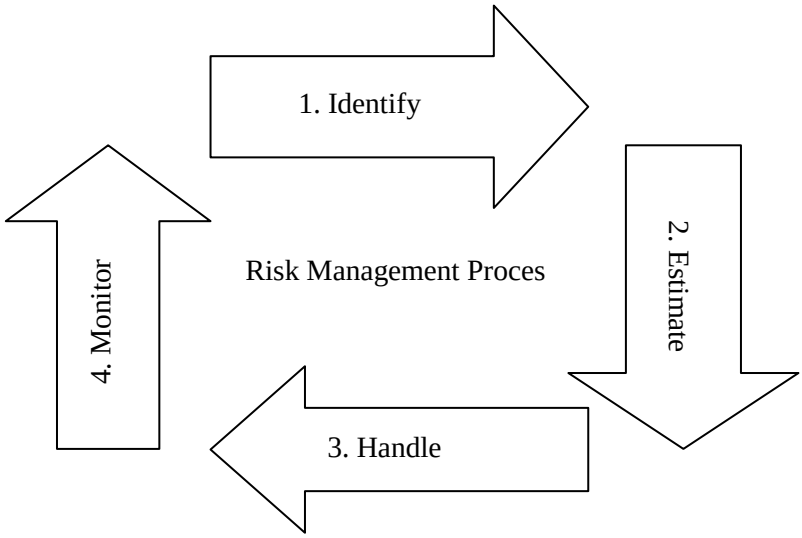
1.3. Risk versus peril and hazard

The insurance literature uses some other concepts related to risk, such as peril and hazard. Peril is defined as the cause of loss. Hazard is defined as the condition that creates or increases the frequency or the severity of a loss from a peril. For example, one of the perils that can cause an auto loss is the collision. The collision is the peril – which is the direct cause of loss. Why does collision occur? By this question we find the hazard: the icy street or the high speed above the allowed limits, or the frost. Each of these hazards may increase the probability of a collision. There are three main types of hazards: physical, moral, and morale. The above-mentioned hazards are of physical type. The Physical hazard is a physical condition that creates or increase the the frequency or the severity of a loss. Such hazard may or may not be within the human control. Moral hazard is defined as the dishonesty of an individual which creates or increases the frequency or the severity of a loss. Examples of moral hazard include faking an accident to collect the insurance money, or intentionally starting a fire, or submitting a higher amount of claim etc. Fraud is e serious problem for insurance companies and increases the cost of insurance. Morale hazard is defined as the indifference to a loss due to the existence of insurance. In this case, the loss is not deliberately caused by the insured. The loss is caused by a careless behavior. For example, the tendency of individuals to leave the keys in an unlocked car, which increases the chance of loss, is called morale hazard.

1.4. Risk management

The risky situations are unpleasant to individuals. The presence of risk results in undesirable social and economic effects. First, due to the risky situations, people set aside a reserve fund in case of emergency. Second, the risky situations increase the fear and worry that the people face. Third, due to the presence of risk, the society may be deprived of certain goods and services. As result, most people try to avoid risk as much as possible or to reduce its negative consequences. In general, the individuals are risk averse, which mean that if they must decide between two risky alternatives that have the same expected outcome, they will choose the alternative whose outcomes are less variable –the less risky one. Risk adverse individuals generally are willing to pay in order to reduce the risk, or they would like to be compensated if they take more risk.

Risk Management is a process that identifies loss exposures faced by an organization/individual and selects the most appropriate techniques for treating such exposures. Risk Management process is useful before and after a loss occurs. It involves four steps, as the following Figure shows:



Risk Identification – Define and identify all sources of risk: actual, anticipated, and perceived. The identification of all sources of risk may be a very difficult task because practically is almost impossible to identify all the sources of risk.

Risk Quantification – Evaluate and estimate the financial impact on the firm of all pure and speculative risks identified. The financial impact may be estimated by determining the size (severity) and the frequency of the loss. The loss severity is the probable size of the losses that may occur. The loss frequency is the probable number of losses that may occur during a certain time period. Depending on the loss frequency and loss severity, risk manager can select the appropriate technique for risk management.

Risk Management – Decide how to handle the risk. There are five basic methods of handling risk, which can be classified in two groups: risk control techniques which aim to reduce the frequency and the severity of losses, and risk financing techniques which aim to finance the losses.

Risk control techniques include a) avoidance which means that the risk is abandoned; b) prevention which refers to the measures that reduce the loss frequency; c) reduction which refers to the measures that reduce the loss severity; d) diversification which reduce the risk by spreading the loss exposures among different parties.

Risk financing techniques include a) retention by which an organization or individual retain a part or all losses that can result from a given risk; b) transfers through contracts like hedging (using financial derivatives such as forwards, futures, options and swaps) and insurance.

In order to determine the appropriate risk management techniques, risk manager may use the following table, which classifies the losses according to their frequency and severity.

Loss Frequency	Loss Severity	Appropriate RM Technique
Low	Low	Retention
Low	High	Transfer
High	Low	Loss control
High	High	Avoidance

Risk Monitoring – Track and assess the performance of the risk management strategy. Risk management program must be periodically reviewed and evaluated to determine whether the objectives have been achieved or not.

2. INSURANCE MECHANISM

2.1. Insurance definition

One of the usual techniques used to transfer the catastrophe risk is insurance. As a technique of risk management program, insurance is appropriate for loss exposure which has low probability of loss but high severity of loss. The transfer of risk from the individual to the insurance company is carried through a contractual agreement under which the insurance company, in consideration of the premium paid by the insured and his promise to abide the provisions of the contract, promises to make payment to or on behalf of the insured, for losses caused by the perils covered under the contract. The main purpose of the insurance is to indemnify the insured, to restore his financial position prior to the occurrence of the loss. The indemnification of the injured parties is possible through the process of pooling and sharing of losses. The losses suffered by a small group of insured are spread on the entire group of insureds, and the average loss (included in the premium) substitutes the large actual loss. But insurance companies do not cover all the kinds of risks. The next section describes the nature of risks transferred though insurance device.

2.2. Risk transferred through insurance

According to the insurance literature the risk can be classified in several distinct categories:

- pure risk and speculative risk
- dynamic risk and static risk
- fundamental risk and particular risk

Pure risk is a category of risk in which the outcome is either loss or no loss. Examples of pure risk include the uncertainty of loss of one's life or property by fire, flood, windstorms, earthquakes or other perils. The speculative risk is a category of risk in which the outcome will be either a profit or a loss. Examples of speculative risks include a business venture, gambling transactions, investing in real estate or stocks etc. Insurers generally insure only pure risks, while the speculative risk is normally handled by techniques other than insurance, such as diversifications, hedging or assumption of risk etc.

Dynamic risks are risks produced because of changes in economy. Examples of dynamic risks are variations of prices level, consumers preferences, incomes level, technology and production innovations etc. Such changes may cause losses to some citizens. But on the other hand, the society may benefit in long-run due to the redistribution of resources. Static risks include losses that would occur even there is no change in the economy level. Examples of static risks include uncertainties due to random events such a fire, windstorm or other people's negligence. As result of occurrence of static risks there is no chance of profits for anyone. Therefore, this kind of risk is privately insurable.

A fundamental risk is a risk that affects the whole economy or a large part of population or community. Examples of fundamental risks include the wars, earthquakes, health diseases, economic recessions, inflation etc. Fundamental risks may be static or dynamic. Particular risk affects an individual or a small group of individuals. They affect the individual and not the entire group. Insurance can be easily used for the management of the particular risks, but the government assistance is necessary to insure the fundamental risks, such as social insurance programs or unemployment compensation programs.

2.3. Requirements of an insurable risk

There are some requirements that should be fulfilled before a pure risk can be privately insured. The criteria are as follows:

There must be a sufficiently large number of similar exposure units. Insurers use the law of large number to predict probable losses. Therefore, it is essential that a large number of independent and similar, not necessarily identical, units be exposed at the same peril. To be successful, an insurance plan must reduce the risk by making losses predictable within certain ranges of accuracy. According to the law of large number, as the number of exposure units increases, the more certain is that actual loss experience with equal probable loss experience. The insurance is the device through which the objective risk is significantly decreased.

The loss must be accidental and unintentional. The loss must be result of a contingency i.e. there must be some uncertainty surrounding the loss. Otherwise there would be no risk. If there is no risk, insurance would be worthless, as its purpose is to reduce the risk. The loss should be beyond the control of the insured. To satisfy this requirement, insures usually exclude in all policies any loss caused intentionally by the insured.

The loss should be definite and measurable. The loss must be definite in time, cause, place and amount. Most losses are easily determined with reasonable accuracy, such as death, property losses etc. However, some losses are difficult to be determined such as disability or sickness, and some others are difficult to be measured such as the loss from "pain and suffering".

The loss should not be catastrophic. A large number of units must be exposed at the same peril, but not all or the most part of the exposed units should suffer from the loss at the same time. Catastrophic loss exposure is defined as a potential loss that is unpredictable and capable of producing an extraordinarily large amount of damage relative to the assets held in the insurance pool (Dorfman M., 2005). The insurance principle is based on the notion of sharing losses. If all the exposure units in a certain class incur a loss at the same time, the pooling will not work, and the insurance will be no longer an effective technique.

The chance of loss must be calculable. The insurer must be able to calculate the probability of loss. Some probabilities of loss can be determined by logic alone (by deductive reasoning), for example the probability of rolling a six with a single die is 1/6. Other losses must be empirically determined (by inductive reasoning), for example the probability that a person age 30 will die before the age 50. If no statistics on the chance of loss are available, the degree of accuracy of the insurer's calculation would be low, despite the large number of insureds.

The premium must be economically feasible. The insurers collect the premium to pay the losses, the loss-adjustment expenses and to provide a profit for themselves. The rates charged by insurers should be adequate to pay all losses and expenses, and they should be not excessive in order that insured pay no more than their coverage. If the chance of loss is much above 40 percent, the policy will exceed the amount the insurer must pay under the contract (Mehr R. 1980). Otherwise, if there is a sufficiently large group of insured, the cost may be spread over the entire group and the premium may be feasible.

2.4. Does the natural disaster risk satisfy the requirements of an insurable risk?

According to the above classification, the natural disaster risk is:

- a pure risk as the society does not benefit when a natural disaster loss occurs, i.e. insurable risk;
- a static risk as it occurs due to random events and it is not a source of gain for the society, i.e. insurable risk;
- a fundamental risk as it affects a large group of population, i.e. not entirely privately insurable.

The natural disaster risk meets the following requirements:

There are a large number of units exposed to the natural disaster hazards. The losses resulted from the natural disaster risk are out of the individual control. There are accidental and unintentional. If insurers cover a sufficiently large group of exposures the premium may be feasible.

The natural disaster risk does not fully meet the following requirements:

When a natural disaster takes place, often it is very difficult to measure the amount of loss, or at least the actual loss can be measured only after a certain period of time. As the "catastrophe" is the synonym of disaster, the loss resulted from the natural disasters is catastrophic. The natural disasters occur in irregular basis therefore their probability cannot be accurately estimated.

As result the natural disaster risk does not fully satisfy the requirements of an insurable risk. Although these requirements represent the ideal, in practice, insurance is written under less-than-ideal conditions. However private insurance ventures that depart too far from the ideal are likely to fail (Dorfman M. 2005).

3. INSURING THE DISASTER LOSSES

The insurance companies would ideally wish to avoid the catastrophic losses because they are unpredictable, the loss distribution is hardly to be evaluated, and the rate making process is very difficult. But actually, insurance companies provide coverage for catastrophic losses, natural catastrophes and man-made disasters. Financiers have developed arrangements that provide protection to insurance companies faced with catastrophic losses. That means that insurance companies have found a way to use the resources of the financial market to meet the problem of catastrophic losses. There are at least four basic methods that allow them to accept exposures that otherwise would have been refused.

3.1. Reinsurance

First, reinsurance may be used by which insurance companies are indemnified by reinsurers for catastrophic losses. Reinsurance is a method created to divide the risk among several insurance companies. Reinsurance is the shifting of a part or the whole risk written by one insurer, called the ceding insurer, to another insurer, called the reinsurer. The transaction is carried through agreements, called treaties, which specify the ways in which risks will be shared by the participating insurers. The first decision taken by the ceding insurer is to define the retention limit that is the amount of insurance retained by the ceding company, which varies with the financial position of the insurer and the nature of the exposure. There are several types of reinsurance treaties. The excess-loss-treaty is designed largely for catastrophic protection (Cat-XL). Losses in the excess of the retention limit are paid by the reinsurer up to some maximum limit. The excess-of-loss treaty can be written to cover: a) a single exposure; b) a single occurrence, such as e natural disaster loss, or c) excess losses when the primary insurer's cumulative loss exceeds a certain amount during a certain period (Rejda, G. 2000). For example, suppose that Vienna Insurance Group wants protection for all the losses resulted from floods in excess of 2 million Euros. Vienna Insurance Group can write an excess-of-loss treaty with Swisse Reinsurance Company, to cover a single occurrence during a year. In this case the

reinsurer agrees to be liable for all the loss resulted from flood, exceeding 2 million Euro, but up to a maximum of 10 million Euros. If a 6 million flood loss occurs, Vienna Insurance Group would pay the first 2 million Euro (the retention limit), and the Swisse Reinsurance would pay 4 million Euro.

3.2. Distributing the coverage over a large geographical area

Second, distributing their coverage over a large geographical area; as result the possibility of a catastrophic loss will be reduced. If a multinational insurance company would cover the fires in Russia, the earthquakes in Italy and the flood in France, then the insurance company would have a more diversified portfolio and will have more stable financial results. Distributing their coverage all over the world will permit the insurance companies to assume different types of risk. Through this geographic diversification they would be able to mitigate the risk they face.

3.3. Financial market instruments

Third, insurance companies use the financial market to transfer a part or all the catastrophic risk to investors, in the form of insurance linked securities (ILS). Examples of ILS are contingent surplus notes, catastrophe bonds and exchange traded options.

Contingent surplus notes allow an insurance company to protect itself from paying a large number of claims resulted from a disaster. The investors put the funds in a trustee that buy treasury securities. The investors receive the interest from the government securities plus an additional interest paid by the insurance company, in order to induce the investors to put the funds in the trustee then to invest the funds directly in government securities. If a catastrophe occurs, the insurer has the legal right to replace the government securities with its own contingent notes, or in some cases with its own preferred stock. The insurance company continues to pay the interest and the principal of its own notes, but there is also more risk of default, because it is now the insurance company and not the government which is paying the interest.

Catastrophe bonds are another financial arrangement that allow insurance companies to transfer the risk of catastrophe. Catastrophe bonds (Cat bonds) are special bonds issued by insurance companies to help them pay for natural catastrophic losses. The investors put the funds in a trustee, called the special Vehicle Purpose (SVP), that buy safe securities (treasury bonds) and other high-quality securities. The Cat-bonds are issued by the SVP. The bonds are usually rated below investment grade (junk bonds) and pay relatively high yields. If a catastrophe event occurs the insurance company can withdraw funds from the SVP to pay claims and no repayment is made to the investors. If the specified catastrophe event does not occur, the investors receive their principal plus interest that is relatively high.

The insurance companies can transferee the catastrophe risk through exchange traded options. These options that are sold by speculators and purchased by insurance companies, are standardized contracts that give the insurance company the right to a cash payment from the seller (the speculator) if a specified index of catastrophic losses reaches a certain level within a specified time period.

3.4. Microinsurance

Microinsurance, as a financial tool that belongs to microfinance, is widely recognized and known as a flexible and essential device in developing countries context. The aim of microinsurance is to provide insurance against natural disasters to poor individuals. It is a financial device that provide low-income households, farmers, and business with access to post-disaster liquidity, thus securing their livings and providing for their reconstruction. It has some basic features as households or farmer participation, small group involved, and small geographic area. It can be used by low income people, who cannot have access to traditional forms of insurance. This product is characterized by the member's willing to pay and low-cost transactions. Micro-insurance can be indemnity based, where products are written against actual losses, or index-based, where products are written against physical or economic triggers, that is, against events that cause loss, not against the loss itself. The index based insurance is effectively used especially in agriculture. Any independent gauge can be used and developed as an index for an insurance contract which is secure and must be highly correlated with agricultural losses (Skees, 2001). To avoid the high transactions cost of indemnity-based insurance schemes, index-based or parametric schemes create the payouts contigent on a physical trigger, such as rainfall, temperature or wind speed measured in a local weather station. In the case of weather derivatives, farmers collect an insurance payment if the index reaches a certain measure or "trigger" regardless of actual losses.

The World Bank has provided technical assistance for implementation of innovative index-based crop insurance schemes in developing countries. For example, in Malawi, where the economy and livelihoods are severely affected by rainfall risk, groundnut farmers can receive loans that are insured against default with an index-based weather derivative, or in Mongoly herders can purchase an index-based insurance policy to protect them against livestock losses due to conditions of extreme winter weather (as explained hereinafter in the lecture). The insured farmers and herders are more creditworthy, therefore insurance can also promote investments in productive assets and higher-risk/higher-yield crops. Moreover, insurance can encourage investment in disaster prevention if insurers offer lower premiums to reward risk-reducing behavior. Thus, microinsurance can be seen as an effective risk-transfer mechanism and an integral part of an overall disaster risk management strategy.

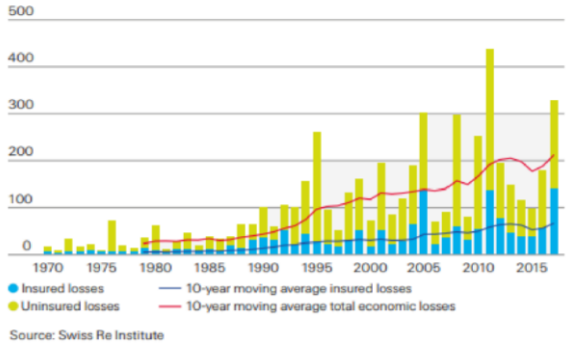
A report by the International Fund for Agricultural Development and World Food Programme cites 36 weather index insurance programs, including 28 addressing individual farmer/herder, slum dweller, village or cooperative risk (Hazell et al. 2010). Index insurance reduces moral hazard since claims are independent of losses. As another innovation, albeit with only one pilot application, insurance payouts can be linked with forecasts so that clients have the liquidity to take preventive measures to reduce losses (Skees and Collier 2010). The private sector is taking an interest in micro-insurance markets. For Swiss Re, the target market includes those who can afford commercially viable premiums, which they identify asthe estimated 2.6 billion people living above the international poverty line of $ 1.25/day but below $ 4/day (Swiss Re 2012). Few insurers, however, are optimistic about the prospects of disaster micro-insurance for the very poor (below USD 1.25/day) unless it is supported by the government, NGOs or international donors.

4. DISASTER INSURANCE ALL OVER THE WORLD

Although the difficulties to cover the losses resulted from natural disaster risk, many insurance companies all over the worlds have found the mechanism to insure these losses.

4.1. What part of disaster risk is actually insured all over the world?

According to the Swiss Re Sigma publication, economic losses from natural catastrophes and man-made disasters across the world were estimated USD 337 billion in 2017. Natural catastrophe-related economic losses were estimated USD 330 billion in 2017, coming mostly hurricanes, severe storms, wildfires, floods and other weather events in North America, the Caribbean and Europe. Insurance coverage is not universal. There was an all-peril catastrophic protection gap of USD 193 billion in 2017. Therefore, the insurance industry covered about USD 144 billion – more than two fifth - of the economic losses in 2017. The following figure shows the difference between insured and economic losses over time, termed the insurance protection gap. The rate of growth of economic losses has outpaced the rate of growth of insuring losses over the 26 past years. In terms of 10 rolling averages, insured losses grew by 5,4% between 1991 and 2017, and economic losses by 5,9%.



Insured losses versus uninsured losses, "Sigma"/2018

4.2. How the natural disaster risk is handled in selective countries?

Disaster risk insurance schemes often require partnerships between governments, international organizations and the insurance industry.

Several countries have used different schemes for transferring the natural disaster risk faced by individuals, businesses firms, insurance companies and governments. As the governments are the ultimate responsible for the financial loss resulted from natural disasters, especially in developing countries, where the financial system is not developed, they are very interested in developing innovative financial solutions to mitigate the financial impacts of natural disasters. Some examples of public-private insurance programs implemented in several countries are as follows:

In *Mongolia* herders can purchase an index-based insurance policy to protect them against livestock losses due to conditions of extreme winter weather. The insurance program is a combination of self-insurance, market-based insurance and social safety net.

Small losses which do not affect their viability are retained by the herders, while larger losses are transferred to the private insurance industry. Only the final layer of catastrophic losses is borne by the government.

According to the *Turkish Catastrophe Insurance Pool* launched in 2000, earthquake insurance policies are obligatory for all property owners in Istanbul and other high-risk urban centers. Apartment owners pay a premium based partly on their risk to a privately administered public fund. If the fund cannot meet claims after a major earthquake, the World Bank provides a contingent loan .to the pool.

In 2005 nearly 1000 smallholder farmers in *Malawi* participated in a pilot weather insurance project that allowed them to access an input loan package for better groundnut seed. According to the project, the farmer enters into a loan agreement with a higher interest rate that includes the weather insurance premium, which the bank pays to the insurer. The insurance payments are index-based depending on precipitation measured at one of three weather stations within the region of the pilot program. In case of a severe drought, the borrower pays a part of the loan, and the rest is paid by the insurer directly to the bank.

The *Mexican* government has chosen to insure its catastrophe reserve fund, FONDEN, against earthquakes with a mix of reinsurance and a catastrophe bond. In 2006, FONDEN issued a USD 160 million catastrophe bond (CATMEX) to transfer Mexico's earthquake risk to the international capital markets. It was the first country that issues a multi-peril multi-region cat bond using the World Bank's Multicat Program.

In *France*, private insurers are required to offer catastrophe insurance in all-hazards property policy. Policies are not risk based and the program is reinsured through a public administered fund. If the fund does not satisfy the claims, taxpayers will be called to pay.

The *Caribbean Catastrophe Risk Insurance Facility* (CCRIF) went into operation in June 2007 with the participation of 16 Caribbean countries. The Caribbean Island States have formed the world's first multi-country catastrophe insurance pool, reinsured in capital markets, to provide governments with immediate liquidity in case of large losses due to hurricanes and earthquakes.

In *Romania*, in 2008, the Pool Against Natural Catastrophes (PAID) was set up as an insurance reinsurance company, formed by the association of 12 insurance companies. The insurers which are members of Catastrophe Insurance Pool sell mandatory indemnity-based insurance against earthquakes, floods and landslides.

5. STUDY CASE – DISASTER RISK MANAGEMENT IN ALBANIA

The four main hazards affecting Albania are forest fires, floods, earthquakes and snowstorms. Other hazards include landslides, drought, epidemics, avalanche, tsunami, technological hazards, the dam burst and storms. Risk to natural hazards is primarily driven by economic, social and environmental factors, as well as institutional and political context

While information on risk to natural hazards in Albania remains patchy, available data show that the risk level is increasing and is comparatively higher in Albania than in neighboring countries. According to the World Risk Index of 2014, Albania ranks 37th,

Serbia ranks the 76th, and Bosnia and Herzegovina ranks the 95th in the world in terms of the risk of becoming the victim of a disaster resulting from an extreme natural event.

5.1. Institutional management of disasters in Albania

The legislation for disaster management in Albania is composed of the articles 170 (extraordinary measures) and 174 of the Constitution of the Republic of Albania (which address the issues of state of emergency and disasters, the acts issued and the measures taken under these circumstances) and the law on 'Civil Emergency Services' – Law 8756 from 2001 and Law Nr. 11/2013 "On some amendments to the Law no 8677 dated 04.05.2001.

At a national level, the Council of Ministers leads and governs the national system of civil emergency management in Albania. Each line Ministry is responsible for planning and handling civil emergencies, according to their area of expertise.

Albania developed a 'National Civil Emergency Plan' in 2004, in line with the current law.

The current law refers to the participation of civil society through volunteer services and refers to the Albanian Red Cross (ARC) as the main civil society partner. The ARC has the responsibility for local risk and capacity assessments, public education and community-level disaster planning.

Regarding financial resources, the Law on Civil Emergency Services mentions that the State budget is the "primary financial resource for civil emergency planning and crisis management" and that ministries should have an annual budget for civil emergency planning and response within their respective field of activity.

The Albanian Government is cooperating with Europa Re (shareholder, member), the World Bank and UNISDR in the context of the South Eastern Europe and Caucasus Catastrophe Risk Insurance Facility (SEEC-CRIF)) to carry out the preparatory work required to launch a regional insurance scheme. The risk context in Albania requires measures to establish incentives to increase the insurance coverage among homeowners and small and medium businesses in order to reduce the dependency on government assistance in case of disasters.

5.2. Albanian insurance market capacity for managing disaster risk

At the present the insurance market is not actively involved in the process of disaster management. Up to now, the management of disasters, especially natural ones, has been considered as a government responsibility. In Albania, people always have relied on government to provide protection and financial relief from natural disasters and they have historically been indemnified from the state budget. But when the government offers protection against the risk of natural disasters, it is not free. In other words, all the citizens have to contribute in indemnifying the damages through paying higher taxes. The funds that the government use to indemnify the disaster damages have been removed from other sectors of the economy. The experience of all developed countries over the world, provide several methods of relieving the state burden, by involving the insurance market in the disaster management process. There are at least two alternatives to be followed:

1. The government may manage by itself the disaster risk by purchasing "cat bond" in international reinsurance markets. This option is suitable especially for the countries where the domestic insurance market is not developed. But, if the government selects this alternative, the domestic insurance market will be condemned to be underdeveloped.

2. The second alternative is the collaboration of the government with the domestic insurance companies. For example, in Germany, the state collaborates with insurance companies in the disaster risk management, by not indemnifying the injured people from any natural disaster, if they have no insurance. In the context of a low level of insurance culture in Albania, the implementation of this model will not have any positive impact on the person's behavior toward insurance. Therefore the best option is that insurance against disasters should be mandatory.

According to the World Bank, in Romania, where the insurance against seismic risk is obligatory, about 60 percent of the homeowners has purchased insurance policies. Following the successful experience of Romania, this option is suggested in 2014 by the World Bank to be followed in Albania. The World Bank has given some suggestions regarding the coverage range and the premium rates. The minimum coverage should be between Euro 20.000 - Euro 40.000 and the premium should not exceed Euro 50. The draft-law has been discussed by the interested parties and the people have been very sensitive especially regarding the insurance price. First of all, they consider the premium very high in respect to their revenues. In Albania, the citizens spend on average Euro 44 per year (2017) for insurance products (with the exception of social insurance). The imposition by law of a new extra premium is considered as a large burden to them. Perhaps this is one of the reasons of dragging the approval of the law. Another problem related to the premium, is that not all the citizens should pay the same premium. There are many buildings, constructed after 1990, without any legal permission, in very risky areas. But actually, almost all the buildings have been provided or are going to be provided with the legal documents, and it is not fair that all homeowners pay the same premium. The bonus-malus system should be applied. The premium amount should depend on the riskiness of the area and the value of the building. But the insurance market in Albania does not implement the bonus-malus system, even for the motor third party liability which shares the largest part of the insurance market. Free of bonus-malus system, the insurance market in Albania will not provide the insured with fair premium rates and it is going to keep far away the potential customers, even in the compulsory insurance schemes.

6. CONCLUSIONS

The risk is present in the wholelife of everyone. The academics and practiciens have developed mechanism to manage the risk faced by individuals and businesses. Insurance is one of the oldest devices used to deal with risk. Disaster risk insurance plans cover, against a premium, the costs incurred by the insured subject from catastrophic losses. If the event occurs, the insurance company refunds a part of the costs incurred. The risk must meet some requirements in order to be taken into consideration by insurance companies. Disaster risk does not fully satisfy these requirements. In spite of that, insurance companies have designed solutions that provide protection to insurance companies faced with catastrophic losses, such as reinsurance, distributing the coverage over a large geographical area, financial market instruments and collaboration with

government programs. Especially in western Balkan countries, the losses resulted from disaster risk constitute a large burden to the state budget. It is the time to share this burden with other operators in the market, such as insurance companies. Disaster risk needs to be considered as a political priority to ensure the required cooperation across all the interested parties and to increases the resilience of individuals, companies and public entities to disaster losses.

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REVIEW QUESTIONS

[1] Which are the characteristics of insurance? What types of risk are covered by insurance? Why?

[2] Think about a natural disaster peril. How does it satisfy the requirements for an insurable risk?

[3] How does the insurance companies in your country handle the natural disaster risk?

[4] Which of catastrophe insurance model, discussed in the text, may be implemented in your country context? Discuss.

[5] How does the perils of "fire" and "war" satisfy the requirements for an insurable risk? Are they insurable?

[6] What would happened to an insurance system in which the insureds are totally indifferent to the occurrence of losses?

[7] Which of the following risk are more likely to be covered by insurance companies:

[8] What risk management technique is ilustrated by each of the following:

ANNEX: INSURANCE MARKET IN WESTERN BALKAN COUNTRIES

The practice of insurance in Wester Balkan countries, is found since the middle-age, when gilds have practiced some techniques of risk management. The oldest law in this region is the Dubrovnik marine law of 1568. In the 19th century, the insurance is sold by foreign companies, mainly Italian ones. Only at the beginning of 20th century, the first domestic insurance companies were opened, mainly joint-venture ones. The insurance industry was concentrated in the main cities and the most underwriting class has been the property fire insurance. After the Second World War the insurance companies have been nationalized and all kinds and branches of domestic insurance became state monopoly. There were a limited number of state owned companies. The foreign investors were not allowed. Therefore the insurance industry of these countries suffered the lack of knowing-how techniques and risk management methods. The state industrial property insurance has been the major source of the total insurance premiums.

After the beginning of the reforms in 1990, the economic conditions of these countries have been rapidly aggravated: rapid lowering of the industrial production, high inflation rates and hyperinflation in some cases (i.e. Macedonia 1664 percent in 1992, Albania 35 percent in 1997), the new exchange rate system replacing the exchanged rate ruled by the government, drastic lowering of the gross domestic production etc. Especially the period between 1989 and 2000 is characterized by a huge economic volatility, due to the political problems experienced from the former Yugoslavia countries and due to the pyramidal schemes in Albania.

The transition period was not the same for all the Central Eastern Europe countries. They started the economic reforms at the same time, but each of them follows its own rout toward the open market economy. The countries included in "emerging economies" are not the same as they were in the beginning of the transition period. Actually six of them are out of the "doors" of the Europe, the so-called Western Balkan countries. The political problems, which have continued during the '90, have postponed the economic reforms of these countries. The respective governments have undertaken several economic reforms to meet the objective and the criteria imposed by European Commission. The insurance industry has been part of these reforms.

Some characteristics of Western Balkan Insurance Markets:

- The density and the penetration rates in this region are very low, in respect to the other European countries. The lowest rates are experienced from Albania. The non-development of insurance sector in these countries is dedicated to two factors: the initial low level of the insurance rates and the growth of the non-life insurance sector.
- Within the insurance activity, the non life sector continues to be the major source of the premium revenues. The most part of premiums are written in the motor insurance,

due to the large number of vehicles owned by the citizens and due to the fact that this kind of insurance is a compulsory one.

- In most transition economies, the population started with little understanding of insurance. On the other hand, the domestic insurance companies suffered lack of experience and specialized staff because of no training on private insurance. This problem is solved by opening the domestic market to foreign insurers, which bring with them their experience and the risk management methods.
- Market concentration has been a serious problem for the insurance markets in Western Balkan. But during the last years, due to the entrance of large international groups, it has been reduced.
- Regarding the financial crisis of 2008, it had a little impact on the insurance market of these countries, because of the fact that the financial market are not sufficiently developed and insurance companies are not too much related to them.

Country	Albania	Bosnia & Herzegovinia	Serbia	Central & Eastern Europe	Western Europe	World
Density Rate	44 €	99,5 €	102,5 €	165 €	2.140 €	542 €
Penetration Rate	1,06 %	2,18 %	2,07 %	1,92 %	7,28 %	6,13 %
Life share	7, 4 %	20,38%	22,76 %	29, 34%	59,88 %	54,3 %

Finally we conclude that the insurance markets of Western Balkan countries have not yet reached the level of growth and sophistication which characterized the insurance markets of developed market economies. Key elements for sound insurance markets include an appropriate legal system, protection against fraud, consumer's protection and education, adequate accounting standards and a strong supervisory infrastructure.