

Insurance

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1. Introduction

Background

Changing climate affects almost all economic sectors and therefore almost all areas of insurance. Not only the insurance of buildings and contents, with coverage of natural hazards (storm, hail, flood, landslide, snow load, avalanche, rockfall, rock slide), is affected by climate change but also, amongst others:

- Agricultural insurance against crop failure due to hail, storm, flood, drought, frost or forest fire
- Automobile physical damage insurance against hail, flood or storm
- Business interruption insurance
- Loss of income coverage in the tourism and energy sectors, and in water management
- Health and life insurance coverage for the consequences of extreme events

In Switzerland, building and contents damage as a result of extreme events account for the largest share of total insured loss (table 1). This chapter deals with the impact of climate change on these two classes of insurance, as well as on reinsurance.

Overview

Over the past decades, losses due to natural hazards have increased worldwide and in Switzerland (figs. 1 and 2). This development is mainly due to socio-economic changes: Insured assets have increased, insured assets are increasingly located in exposed areas, the vulnerability of buildings has increased due to construction methods and choice of materials, and insurance penetration has increased. It is not clear to what extent climate change has contributed to the observed increase in losses.

Natural hazard scenarios will continue to change in the future due to societal changes and climate change, and the losses will increase. Early adaptations are required at different levels:

- Insurance and reinsurance companies need to be cost-effective in order to be able to pay damage claims. If claims due to natural hazards become greater and more frequent, premiums will need to be increased or the cover limited. In order to remain profitable with an increasing variability of natural hazards, insurance companies will, in addition, have to increase their capital or their reinsurance cover.
- If strong natural hazards become more frequent, preventive measures will have to be taken in order to make the risk insurable again. Adaptations and the enforcement of spatial planning regulations and standards for construction are the only effective long-term measures against increasing losses due to natural hazards. Insurance and reinsurance will continue to cover losses due to rare events.
- Currently, the insurance industry is developing new products that enable frequent and intense loss events with a high variability to be dealt with. Cat bonds are a first approach, however, their market share is still very small in comparison to traditional insurance and reinsurance.

It is important that the scientific findings regarding the possible consequences of climate change, in particular of extreme events, are already now included in risk models for estimating the loss potential for the insurance industry and other economic sectors

Links to other topics

The insurance sector has links to all other subject areas dealt with in this report:

Land ecosystems

Can provide protection against natural hazards (avalanches, floods etc.)

Agriculture

Crop failure due to hail, storm, flood, drought or frost

Water management

Loss due to water-related natural hazards

Health

Health insurance and life insurance, hospitals

Energy

Insurance of production losses

Tourism

Insurance of production losses

Infrastructure

Insurance of existing facilities

This chapter focuses on the possible impact of climate change on property insurance, with par-

ticular focus on the expected changes in natural hazards. As in many other sectors, the impact of changes in particular extreme events on potential losses, and not the changes in long-term averages, are in the foreground in the insurance sector. This relates to extremes in temperature and precipitation, as well as of wind and hail. Firstly, the operational mode and current performance of direct insurance and reinsurance companies are described, in particular for Switzerland. The impact of natural hazards on insurance is then discussed, based on possible changes in the frequency and intensity of these hazards.

2. How does insurance work?

The fundamental idea of insurance is to group together a large number of people who are at a similar risk, so that in the event of an incident, the people affected can be helped. Insurance is characterised by the following features: reciprocity, profitability, capital requirements, chance and predictability.¹

An insurer uses the incoming premiums to pay the expected losses. Future losses need to be estimated correctly – with consideration of climate change – to make sure that insurance companies can operate profitably. If events that used to be out of the ordinary and random appear with regularity due to climate change, other loss mitigation measures will have to be taken. Insurance is only intended for cases in which the loss can neither be prevented nor reduced by taking measures.

If insurers want to reduce the financial consequences of catastrophic events or unpredictable fluctuations in claims experience, they can insure themselves.² This is called reinsurance. The insurance industry can compensate for large loss events over space, time and/or by including other classes of insurance.

Direct insurance

In table 1, the direct losses for the biggest storm, flood, and hail events in Switzerland are compiled for the different classes of insurance. For these events, damage to buildings and contents account for the largest proportion of the direct

total loss. In the following section, we focus on these classes of insurance.

In Switzerland, there are two insurance systems for buildings and contents: The Public Insurance Companies for Buildings (KGV) and private insurance. Both systems insure against natural hazards unless they can be prevented by reasonable measures. Natural hazards are caused by natural phenomena (storm, hail, flood, snow load, avalanche, landslide and rock slide), which occur suddenly and unpredictably. Premiums for private insurance as well as for the KGV are approved by the state. A part of this premium is used for reinsurance (see below).

Cantonal Building Insurance (KGV)

In 19 cantons³, the public KGV provides unlimited insurance against fire and natural hazards for all the buildings (80% of all buildings in Switzerland). The KGV are required by law within the framework of compulsory insurance and monopoly to cover damages caused by natural disasters. In the cantons of Waadt and Nidwalden, content is also insured by the KGV.

Table 1: The largest insured storm, flood and hail event in Switzerland, split according to property insurance classes (indexed for 2005). (Source: IRV, SVV, Swiss Hail Insurance)

in Mio. CHF	Lothar Storm 1999	Floods August 2005	Hail (Aargau/Zurich) 24.6.2002 ^{a)}
Buildings	750	890	~125
Contents	140	820	?
Comprehensive auto	65	90	~80
Business interruption	20	200	?
Agriculture	2	10	8
Total	~1000	~2000	~250

a) On 8 July 2004, a hail event caused insured car damages of 100 million CHF. However, building damages were much lower.

Since the KGV usually only insure buildings, there is no compensation through other insurance classes, and because they act on a small scale, they lack geographical diversification. The KGV therefore buy additional coverage for out of the ordinary events at the Intercantonal Reinsurance (IRV), and together they offer each other mutual protection against extreme events in the inter-cantonal risk community. The IRV in turn buys reinsurance on the world market.

Private insurance

Private insurers insure buildings in the remaining cantons according to the Insurance Supervision Act (VAG).⁴ Content is also covered by private insurance, except in Waadt and Nidwalden.

Private insurance companies also insure other objects, and, as a rule, operate nationwide or even internationally. Private insurers have also grouped themselves in a natural hazards pool in order to share the risk and pass it on to the international reinsurance market.

Reinsurance

Reinsurers operate worldwide and therefore form an even larger risk community. Thus risks are balanced worldwide and across different

hazards. Reinsurers make it possible to insure even very expensive risks.

As a rule, reinsurance contracts, and in particular the premiums, are renegotiated annually. Essentially, there are two kinds of reinsurance contracts: In proportional contracts, both the incoming premiums and arising losses are shared. There is no loss limit. In non-proportional contracts, there is an upper loss limit. This is the most common kind of contract for natural hazards. Reinsurance can be purchased per event or for annual loss, that is the sum of all losses in a year. The KGV as well as private insurances have chosen annual loss as the reinsurance solution.

In addition to traditional coverage, reinsurance and financial institutions offer products that pass part of the risk on to the financial markets. Catastrophe bonds, so-called “cat bonds”, spread the risk across the financial markets. If the pre-defined event occurs, the invested capital is used to cover the damage, otherwise investors are paid out their invested capital plus interest. Currently, less than 10 billion USD are “insured” in cat bonds worldwide.⁵ Cat bonds have the advantage of being independent of stock exchanges and money markets. Weather derivatives are also independent but are mainly used for the optimisation of profits. A payout is made based on the exceedance or shortfall of mean or at least fre-

quently occurring climatologic values. Currently, the volume traded amounts to about 45 billion USD.⁶ So far, cat bonds and weather derivatives

only cover a small share of the risk in comparison to traditional reinsurance. The available capital on the financial markets is almost unlimited.

3. Claims experience

In Switzerland and worldwide, loss expenses and their variability have increased within the past 20 years. The share of climate change in the increase is largely unknown.

In the past decades, the losses caused by natural hazards have increased worldwide and also in Switzerland. This development is mainly caused by socio-economic changes:

1. Increase in insured assets as a whole and in particular in risk areas.
2. Increased vulnerability of buildings due to construction methods and use of vulnerable materials.
3. Increase in insurance penetration in Switzerland, which was and is already very high for buildings and contents.

4. Change in expectations of insurees.

How large an influence climate change has on the observed increase in losses has not yet been quantified.

The global increase in insured losses is represented in figure 1. It is clear that the losses from the largest natural hazards worldwide exceed those in Switzerland many times over. The year 2005 qualifies as the most expensive year for insurances so far; hurricane Katrina caused the largest ever insured loss of 56 billion CHF. This is considerably higher than the former record loss of 35 billion CHF caused by the hurricanes Ivan,

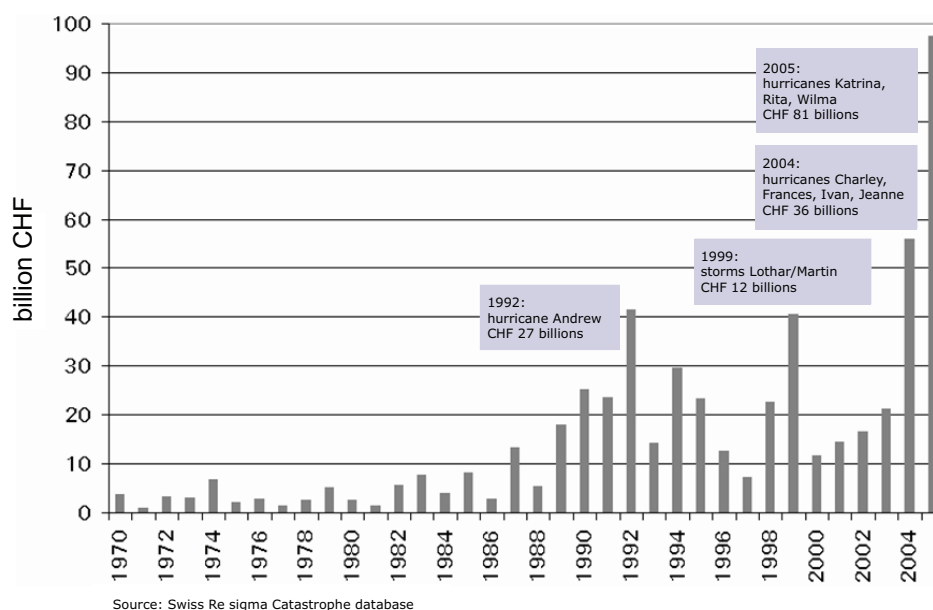


Figure 1: Global development of insured losses caused by natural catastrophes since 1970.

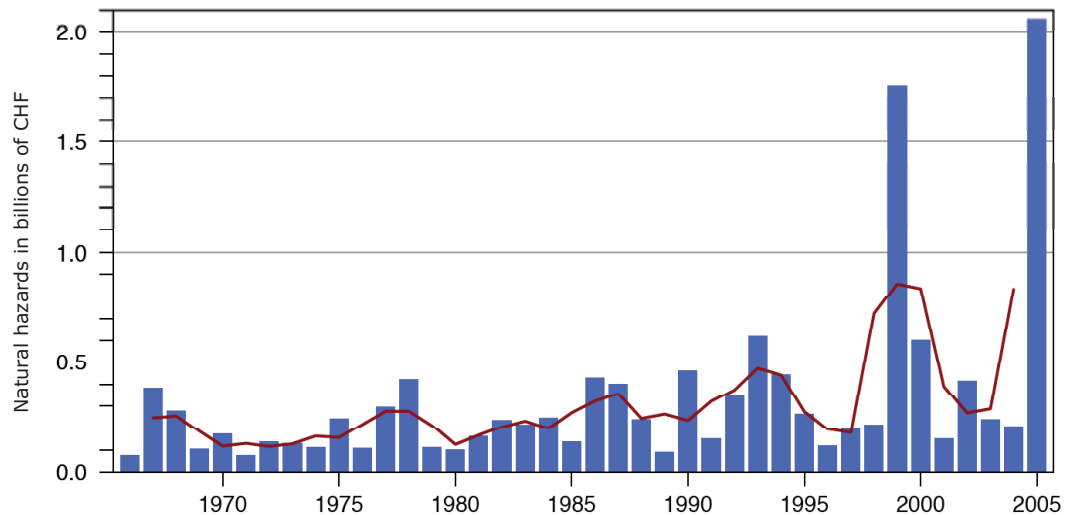


Figure 2: Insured losses in Switzerland (sum of losses of the KGV and private insurance, indexed for 2005). The line shows the 3-year mean. The increase in losses and variability is observable. (Source: VKF loss statistics and SVV; for 2005, only provisional numbers are available)

Charley, Frances and Jeanne in the year 2004. The largest insured loss due to a winter storm amounted to 5.9 million CHF (all of Europe) and was caused by Vivian in 1990. The largest insured losses due to flood so far (4.5 billion CHF) were caused by the flooding of the Danube and the Elbe in 2002.

In Switzerland, an increase in insured losses due to natural hazards can also be observed (fig. 2). The red line shows the 3-year mean, which flattens the outliers. The general increase as well as the increase in variability are observable. The two most expensive years were 1999 and 2005. The year 2005, with losses of more than 2 billion CHF, was the most expensive year for insurances so far. By far the largest part was caused by the floods in August, which has been the most expensive single event up to now. Insured losses in the year 1999 – caused by the avalanche winter, floods in May, a hail event in July and the winter storm Lothar – amount to about 1.8 billion CHF.

Loss potential

Much larger loss events are conceivable than the largest natural hazards which the insurance industry has up to now had to deal with.

In the insurance industry, the term loss potential refers to the estimated insured loss of very rare, but possible, events. In the insurance industry, this is called the Possible Maximum Loss (PML). In table 2, the largest loss potentials are compiled for Switzerland, Europe and the world. Since these numbers are estimates, the loss potentials in the table only give orders of magnitude. For comparison, the largest loss event that has occurred to date is presented. The table indicates that in Switzerland, an insured loss of 3 billion CHF for each hazard must be anticipated every 200–300 years. This is the statistical mean. It is also possible for such an event to occur twice, one straight after the other.

Table 2 shows that the insurance industry within Switzerland but also worldwide has to be prepared for enormous potentials that exceed the largest historic events many times over. It is therefore of great interest whether and how the potentials could change due to climate change. In addition, estimates are usually based on experiences from the past and are therefore only useful to a limited extent for the medium-term future.

Table 2: For a 200- to 300-year event, the rough loss potential for storm, hail and flood in Switzerland, the EU and worldwide is given.

(IRV, Swiss Re, PartnerRe, and other insurance contacts)

in billion CHF	Switzerland		EU		Welt	
	Potential ^{a)}	Largest loss	Potential ^{b)}	Largest loss	Potential ^{b)}	Largest loss
Storm	~3	1	50 ^{c)}	5.9 ^{d)}	150 ^{e)}	56 ^{f)}
Flood	>3	2	15 ^{g)}	4.5 ^{h)}	n/a	n/a
Hail	<2 ⁱ⁾	0.25	4.5 ^{j)}	1 ^{k)}	n/a	n/a

a) The numbers given for Switzerland are based on a study of the Intercantonal Union of Reinsurance and relate to building losses of the 19 KGV, with a return period of about 250 years (Source GB-IRV 2003). The losses of private insurers were roughly estimated.

b) The numbers given for Europe and worldwide are based on a return period of 200 years. (Source: Swiss Re 2006)

c) Winter storms

d) Winter storm Vivian 1990

e) Tropical storms including storm surge

f) Tropical storm Katrina 2005

g) This concerns insurable potential, that is, under the assumption of flood insurance penetration, like for fire.

h) Floods 2002

i) A large part of Switzerland is located in the zone most at risk for hail events, therefore the loss potential is high in comparison to all of Europe.

j) "Hailstorms in Europe – a new look at a familiar risk", Swiss Re 2005

k) Hail, Munich 1984

4. Future perspectives

The following section gives an overview of (selected) future changes in risks. Possible changes in winter storm, flood and hail risk are described and the consequences for insured losses are discussed. The Background chapter contains a summary of the changes in extreme events up to 2050.

The part of climate and societal changes in the development of losses is today not yet sufficiently taken into consideration for risk assessment and risk management. There is particular need for research into the consideration of future losses due to extreme events.

Although the results of scientific studies are becoming increasingly consistent and comprehensive, there are still uncertainties with regard to the impact of climate change on the development of losses (figs. 1 and 2). Thus, for instance, it is unknown to what extent climate change has contributed to the increase in

losses within the past 30 years. The separation of different socio-economic and climatologic influences turns out to be particularly difficult because the cause and effect chain from natural hazard to damage is a complex process that is difficult to model (see Water management chapter).

Winter storms

Winter storms represent the largest loss potential for Europe and the second largest for Switzerland (see table 2). In order to analyse the impact of climate change on winter storms in Europe, and in particular to quantify the consequences on insured losses, scientific models are increasingly coupled with loss models used by the insurance industry.

In a study by Swiss Re and ETH Zurich⁷, several climate models were coupled with an insurance loss model and future storm damage by winter storms was examined. It was shown that in the long term, climate change could lead to more frequent and more intense winter storms and therefore also to higher losses. By the end of the 21st century (2071–2100), the losses Europe-wide could increase by 20 to 70%⁸ compared to the reference period (1961–1990) (fig. 3). In Switzerland, an average increase in losses due to winter storms of about 20% (0–50%, depending on the climate model) is expected. There are no corresponding model calculations for the year 2050. It can be assumed, however, that already by then, an increase in storm losses will be observed, even if to a lesser extent. It is obvious from the model calculations that as a result of climate change, the

rare extreme events with serious consequences, such as the winter storms Lothar or Vivian, will affect the above-mentioned increase more strongly than less intense events: For 100-year events, the increase will amount to about 100% Europe-wide, for 10-year events to about 20%.

Floods

Calculations using regional climate models show that as a result of climate change, the return period of 5-day precipitation amounts (characteristic of long-lasting, intense precipitation) could halve in Central Europe in the future climate (2071–2100).⁹ A 100-year event would become a 50- to 100-year event, a 20-year event would become a 10- to 20-year event. This change would have far-reaching consequences for flood risk and the resulting losses. If, for instance, the risk of floods of the extent of the flood in August 2005 doubled in Switzerland, risk assessment and risk management would have to be adapted. Further consequences affect the planning and dimensioning of protective measures (see Water management chapter). Similar to storms and hail, estimates of flood risk need to take into consideration societal changes (where and how is built and utilised).

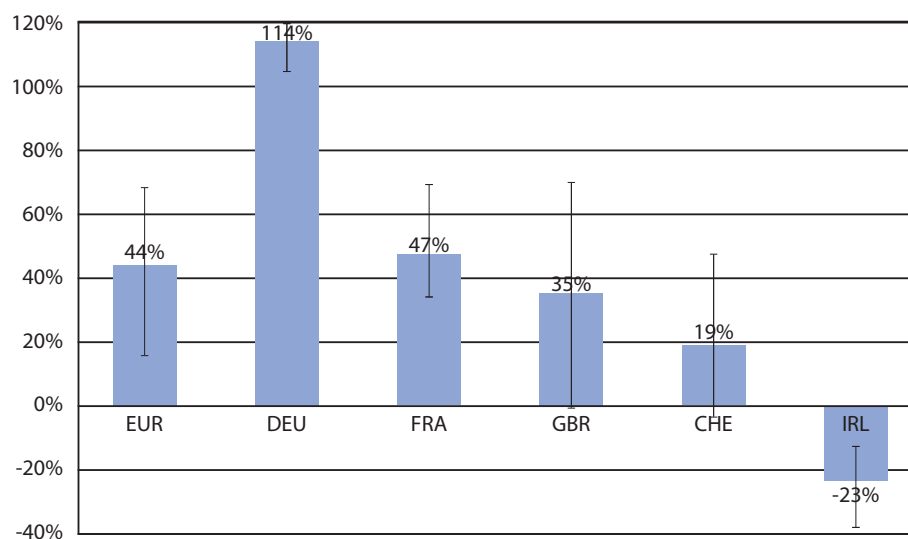


Figure 3: Mean increase in annual losses in Europe (EUR), Germany (DEU), France (FRA), Great Britain (GBR), Switzerland (CHE) and Ireland (IRL) for the time period 2071–2100 in comparison to the reference period 1961–1990. The blue bar indicates the mean value of the climate models, the error bar shows the spread of the models.

(Source: P. Heck, D. Bresch and S. Tröber. The effects of climate change: Storm damage in Europe on the rise. Swiss Re Focus report no. 1503160_06_en, 2006)

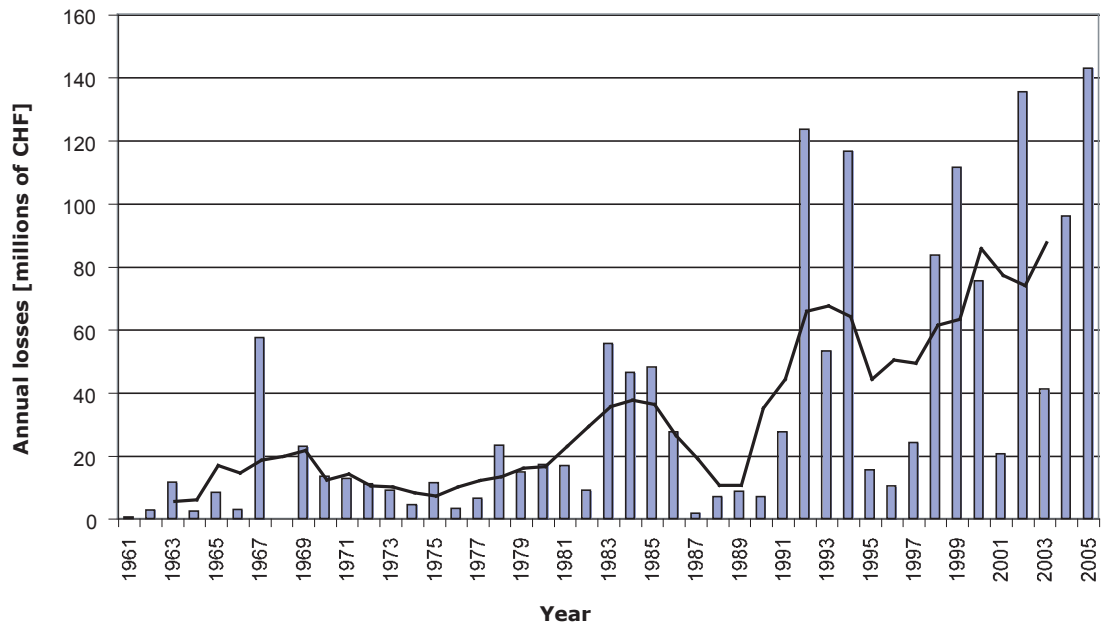


Figure 4: Hail losses of the Public Insurance Companies for Buildings; indexed for the Zurich building-cost index and inflation of 1.5%; includes only buildings, the data for 1968 is missing and for 2005 provisional; black line: 5-year running mean. (Source: VKF loss statistics)

Hail

Large parts of Switzerland are in an area of high hail risk in comparison to large parts of Europe. Accordingly, the loss potential is big. Since 1940, the large-scale weather patterns that are responsible for extreme hail events in Switzerland have increased considerably. If the frequency of these weather patterns also increases in the future,

more frequent hail events are to be anticipated.¹⁰ Since hail events are very local events, it is difficult to simulate them with climate models and to make forecasts about future changes.

Losses due to hail events have also increased in the past. In the past 15 years, the Public Insurance Companies for Buildings have recorded losses about four times higher than in the 60s and 70s (fig. 4).

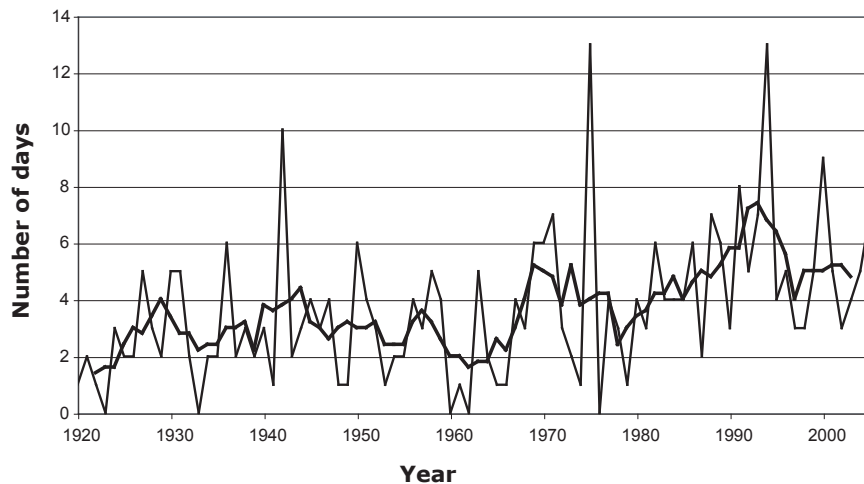


Figure 5: Time series of the number of hail days with 100 or more affected municipalities from 1920–2005. The increasing trend of intense hail days between 1980 and 1994 is clearly visible. (Source: Hans-Heinrich Schiesser)

There are different reasons for this development. Firstly, the number of heavy hailstorms has increased (fig. 5). However, the increase in events is less pronounced than the increase in losses. Secondly, societal changes contribute to the increase in losses. This includes the use of unsuitable materials for hail (e.g. slat blinds and metal cladding) and the increased expectations of insureds. Finally, in the case of small-scale hail storms, the extent of damage strongly depends on coincidence. It is possible that in recent years, areas with higher asset values have been increasingly affected due to coincidence. These three causes act in combination on the development of losses: If hail storms increase as a result of climate change, the probability that areas with

high asset values and delicate materials will be affected will also increase.

Conclusion

It is necessary to better quantify the part of climate and societal changes in the development of losses and to include them in risk assessment and risk management. It is important to consider uncertain predictions as well, particularly in regard to decisions with long-term effects. In the area of property insurance, the changes in extreme events will play the most important role. Studies in this topic area will therefore be necessary as a basis for decision-making and should correspondingly be of high importance in science.

5. Impact on insurance and measures taken by insurers

Climate change and the associated change in intensity and frequency of natural hazards have manifold effects on the insurance industry. A part of these effects can be financially covered by measures taken by the insurance industry itself, others require measures at the social and political level.

Impact on insurance

As mentioned in section 2, insurance is based on reciprocity, profitability, capital requirements, chance and predictability. These characteristics are influenced by climate change in various ways:

Reciprocity

In the future, it will be less acceptable to charge all insureds in affected and less affected areas uniform premiums to finance the losses. Thus, solidarity will be questioned.

Profitability

Incoming premiums will also have to cover the losses in the future. If large loss events become more frequent or more expensive, the premiums and insurance conditions will have to be adapted accordingly in order for the insurance industry to continue to operate profitably.

Capital requirements

If, in addition to the intensity of loss events, the variability also changes, insurance companies will need

to have more capital available to cover the losses or buy higher reinsurance cover. Reinsurance cover can be adapted at short notice, whereas an increase in capital usually takes time and should occur before higher losses reduce the capital.

Chance

Climate change affects the frequency of events. Extreme events that are out of the ordinary and rare today, could occur regularly due to climate change and become the norm (fig. 6). Regular, predictable losses are contradictory to the basic principles of insurance. For these, preventive measures need to be taken.

Predictability

The predictability of a risk is simpler the larger the amount of data, the longer the available data series and the smaller the variability of the data. In order to include climate change in risk analysis, predictions about the expected changes in intensity and frequency of extreme events, and an estimate of their uncertainty are required.

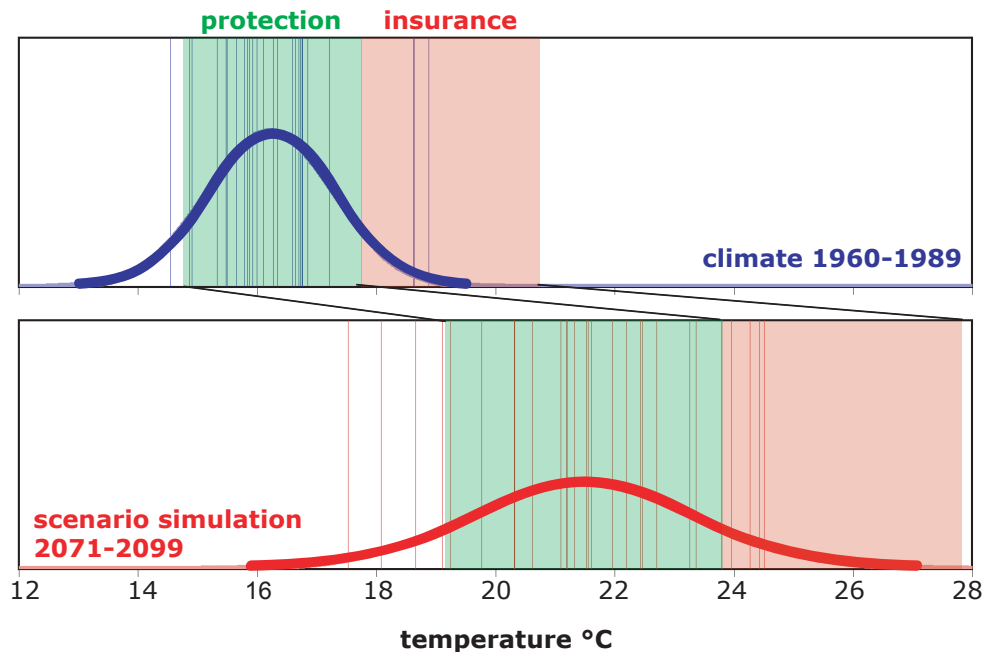


Figure 6: Climate change will change the probability of occurrence and the intensity of events (example of summer temperatures, transferable to natural hazards).¹¹ Insurances cover the losses caused by out of the ordinary, rare, extreme events (red area in the upper figure). If such events become the norm as a result of climate change, other measures will have to be taken to avoid and recover losses (green area in the lower figure). At the same time, the intensity of the extreme events that are intended to be covered by insurance increases (red area in the lower figure).

Measures taken by insurance companies

Insurance companies have several possibilities to react to the above-mentioned effects. In this regard, it is important for the entire insurance industry to include scientific findings about the impact of climate change in risk models.

Direct insurance

Increase in premiums

If the intensity and frequency of loss events increase, insurance companies will have to raise premiums in the long term, in order to continue to be able to pay the arising losses. Premiums will also need to be raised in the event of an increase in reinsurance cover and/or capital.

Adaptation of insurance conditions

Insurance conditions can be adapted. This can be achieved by a higher deductible, by exclusion, or by a cover limit. These adaptations could lead to losses being only paid in part by the insurance. With a deductible, the insurance pays for losses above a certain amount. This may encourage

house owners to protect and maintain their houses in such a way that no predictable or avoidable losses arise. Insurance may exclude, for instance, delicate building materials that according to present knowledge may not resist predictable natural hazards. A cover limit caps the claim to be paid by the insurance.

Risk premiums

In Switzerland, risk premiums for single properties only make limited sense. The premium for all natural hazards (storm, hail, flood, landslide, snow load, avalanche, rockfall and rock slide) amounts to less than 50 cents per 1000 CHF insured. For a single-family house worth 500,000 CHF, the premium amounts to less than 250 CHF per year. Only a massive increase in this premium would cause a stubborn owner to invest money into loss reducing measures. Higher deductibles are more effective.

Reinsurance

In the case of reinsurance, an increase in the frequency and intensity of large loss events will

lead to an increase in reinsurance premiums. Reinsurance companies have to increase their capital in order to continue to be able to pay the increasing claims. Furthermore, reinsurance companies can spread their risk more broadly by buying cover for extreme events from other reinsurers (called retrocession) or via cat bonds on the financial market. It is also conceivable that other instruments for risk transfer will be developed.

Measures by society

Societal adaptations are also required in order to cope with the changes in intensity and frequency of extreme events as a consequence of climate change.

Exclusions, cover limits and insufficient reinsurance cover (or insufficient capital) can lead to gaps in cover that have to be paid for by society or the state. An increase in premiums can be problematic if a large proportion of society can no longer pay the premiums. In terms of sustainability, the goal must therefore be to reduce the effects of natural hazards through societal and political parameters.

On the political level, parameters will need to be adapted – also in the interest of the state – to enable the insurance industry to continue to operate profitably, even if, for instance, higher capital reserves are required to manage higher claims.

At the same time, measures need to be taken to reduce the extent of losses. Spatial planning can influence where building is allowed and where not. In spatial planning, not only the present but the future geographical extent of natural hazards

will need to be considered (see Urban Switzerland chapter).

Construction standards and building laws can influence how and with what materials building is carried out (see Buildings and infrastructure chapter, section 2). It is also necessary to consider future changes here. Planners and builders should be encouraged to plan and to build with the future in mind. Buildings exposed to the weather and at high risk should be built to resist today's bad weather as well as that of the future. Events that are out of the ordinary today, could become the norm by 2050 and should therefore be considered in today's planning.

Insurance companies can support the different adaptations. On the political level, they can advocate creating suitable parameters to cope with the future challenges. Furthermore, insurance companies can promote and call for hazard maps and their implementation, develop instructions and brochures on appropriate building for natural hazards, and provide lists of suitable building materials. By means of exceptions, conditions and exclusions, insurance companies can enhance implementation, however, often only after the damage event.

From an economic perspective, efforts to reduce greenhouse gas emissions are also effective measures for reducing the vulnerability to change. This is particularly valid if emission reductions also protect against climate change (see boxes on emissions trading and climate policy, and on sustainable investments for enhancing energy efficiency.)

Emissions trading and climate policy

The flexibility mechanisms of the Kyoto protocol (Clean Development Mechanism (CDM), Joint Implementation (JI), Emissions Trading) aim at reducing greenhouse gas emissions as cost-effectively as possible. Measures should be taken where they can be realised the most cheaply. The flexibility mechanisms are the only instruments with which to include regions without emission reduction obligations in international climate protection efforts. In addition, emissions trading connects greenhouse gas emissions and capital markets.

By means of emissions trading, a country may participate in the climate protection measures of other countries. A distinction is made between emission rights that are allocated to a country or a company within the framework of the Kyoto protocol or within a closed trading system, and emission rights that are generated by a climate protection project in another industrialised country (JI) or a developing country (CDM). In 2005, the trade volume of allocated and generated emission rights was about the same.

Certificates are traded in different trading systems that are not linked. The most important is the European Union Emission Trading Scheme (EU-ETS). Other trading systems exist, for instance, in the

non-Kyoto countries Australia and the USA. The World Bank is the central institution for transactions of emission allowances that are generated by CDM-projects in developing countries. The development of prices varies considerably for the different markets.

The development of emission rights trading depends on the future development of international climate policy. The following conditions are important for the success of emissions trading:

1. Reduction measures need to pay off. The price for CO₂ should be high enough so that a change to energy supplies with a more favourable energy/emission-relationship, as for instance from oil to gas, is worthwhile.
2. Binding, long-term reduction targets are required so that trading of greenhouse gas certificates has long-term prospects.
3. The different trading systems should be linked to each other and be organised as globally as possible, so that the market can develop full efficiency. A ton of avoided CO₂ will always have the same value for the climate system, irrespective of location and regional reduction target.

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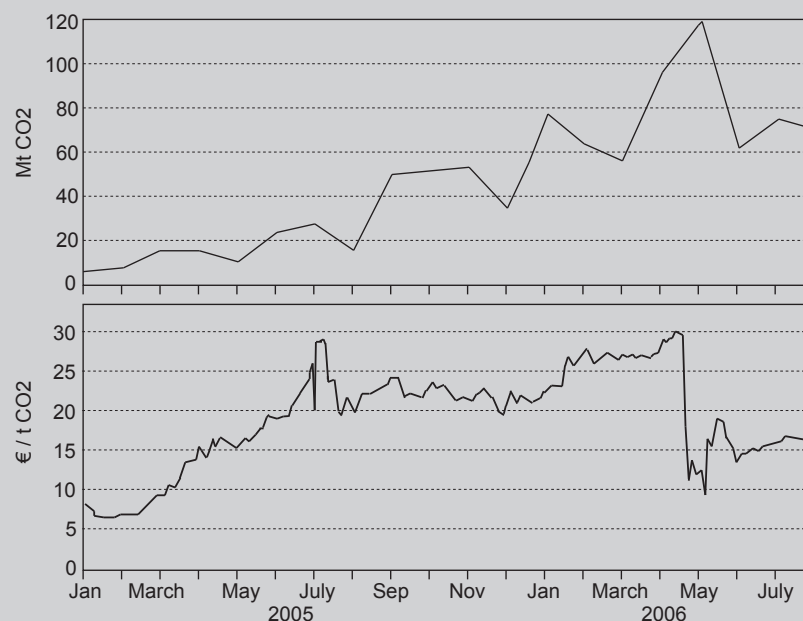


Figure 7: Entire trade volume and price development of emission rights in the European Union Emission Trading Scheme EU-ETS. Since the beginning of EU-ETS in January 2005, the monthly trade volume has risen from 10 million t CO₂ to more than 60 million t CO₂. The certificate prices still fluctuate strongly.

Sustainable investments for enhancing energy efficiency

Companies that deal considerably with humans and the environment generate sustainable profits for their shareholders – this reflection is the basis for sustainable financial investments. However, sustainability funds (Sustainable Responsible Investment, SRI-Fonds) still play a minor role in Switzerland. Of the 500 billion CHF that were invested into basic funds in Switzerland in 2005, the share of so-called SRI-funds amounted to just 1%, in spite of the fact that SRI-funds are on average at least as successful as traditional funds.

Changes mean a challenge to the economy. It must adapt to the changed conditions as quickly and as well as possible. This is the case with climate change, which alters the political and economic parameters. Examples for this are the public funding of renewable energy and energy efficiency, or emissions trading. Investment consultants invest in firms that are best at adapting to changed conditions and take advantage of the chances offered by novel products.

Technologies for enhancing energy efficiency result in a reduction of emissions and energy costs. There are numerous examples of firms that have saved a lot of money by investing in energy efficiency: The BT Group (British Telecom) saved

214 billion USD between 1991 and 2004, DuPont has been able to save about 2 billion USD since 1990. Despite this, risk capital is hardly ever used to promote the corresponding technologies.

Today, basic funds that invest in technologies for enhancing energy efficiency, usually choose investments according to relative criteria. As a rule, it suffices that firms and technologies demonstrate an above-average energy efficiency. The question of whether they will meet a long-term efficiency target does not play a role here. However, in order that technologies for enhancing energy efficiency contribute to the long-term climate protection goal, their selection must depend on long-term climate protection and energy efficiency targets:

- In the case of climate protection, Western industrial countries should reduce their greenhouse gas emissions by 60–80% by 2050. This represents an annual reduction of 2–3.5%.
- Under the assumption that an industrial sector increases by X%, its efficiency should be increased by (2+X) to (3.5+X)% per year.

From today's perspective, it is clear that only new technologies will be able to fulfil these requirements.

*Dr. Gerhard Wagner (UBS) and
Simone Schärer (SAM)*

Literature and notes

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- 5 www.swissre.com
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