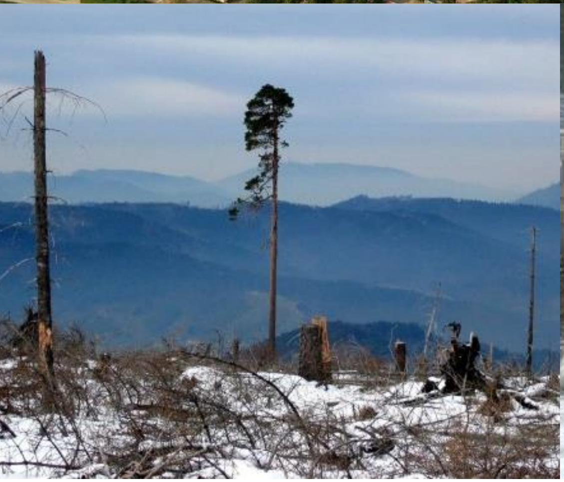
CONHAZ
Costs of Natural Hazards



Natural Hazard Insurance in Europe.
When could EU action be beneficial?

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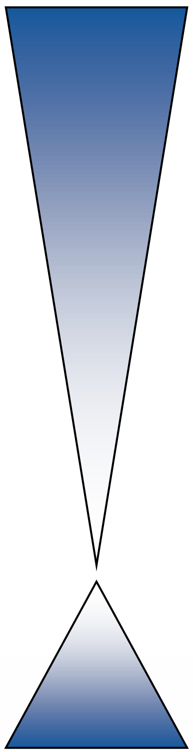
Financial Risks of Natural Hazards

- *Financial Risks of Natural Hazards* (FRNH) are micro- and macroeconomic disruptions caused by the occurance of natural hazards (such as: earth quakes, subsidence, land slides, avalanches, snow pressure, storms, hail, heavy rain, flood and storm tides)

- *FRNH Transfer Systems* are *any* private, public or combined private and public (PPP) institutions for the compensation of (optimal, residual) economic loss caused by the occurance of natural hazards

Stylized Models for FRNH-Transfer

Intensity of regulation …



… and state involvement

Modell 1 (M1)**: (Regional) public monopoly insurer of natural hazards**

Modell 2 (M2)**: Compulsory insurance of *all* natural hazards**

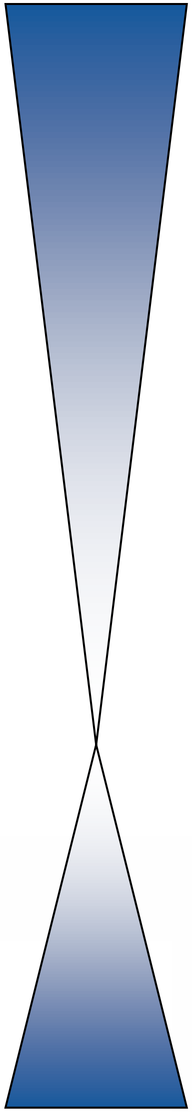
Modell 3 (M3)**: Compulsory inclusion of (*all)* natural hazards into general house owner insurance** *(„coupling of contracts“)*

Modell 4 (M4)**: „Free-market“ natural hazard insurance with ad hoc-governmental relief programs**

Modell 5 (M5)**: Tax-financed governmental relief funds**

FRNH-Transfer Systems in Europe

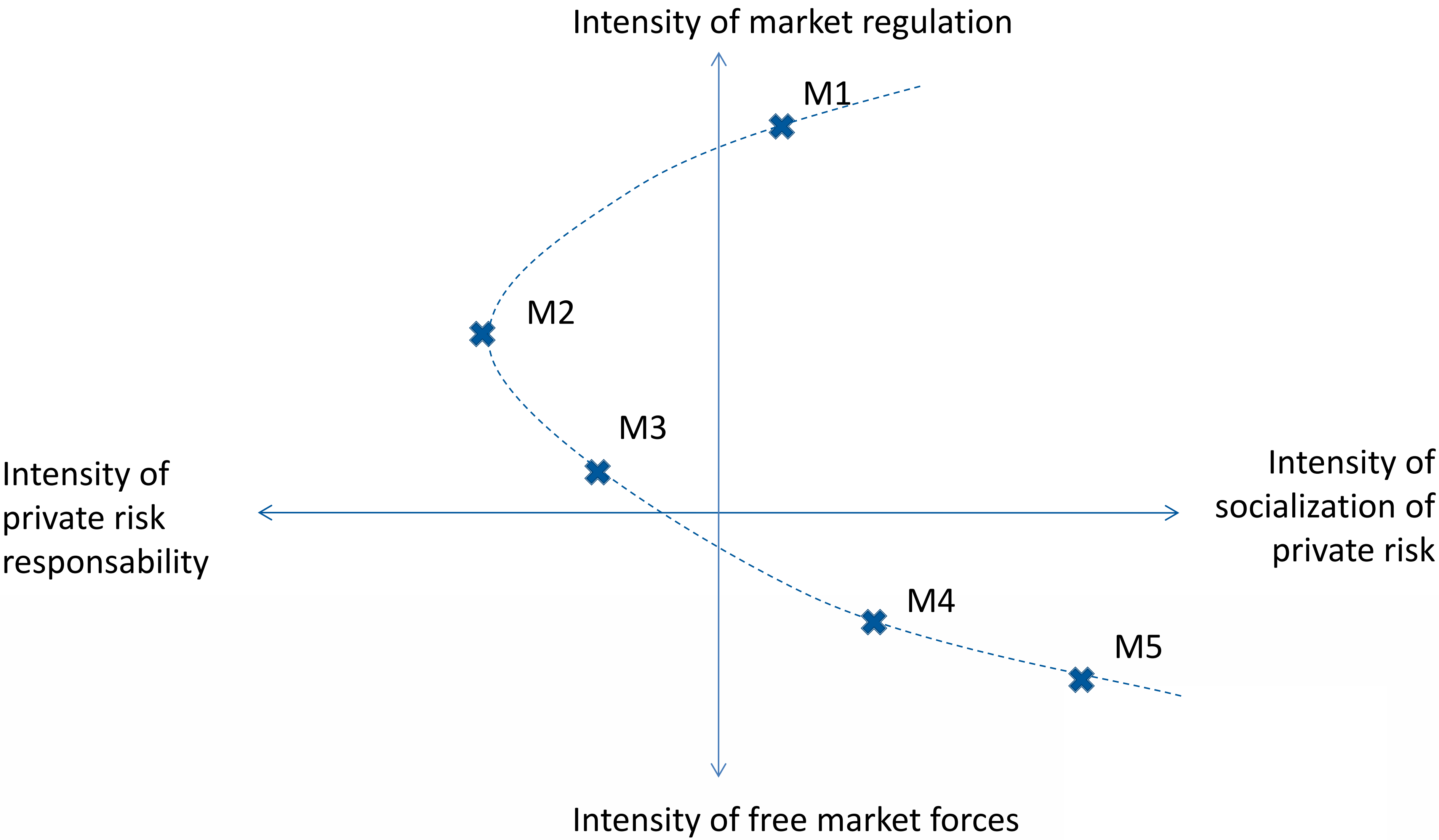
Switzerland	Dual system of private and public insurance with monopoly character. In all cantons, fire insurance and insurance against atmospheric damage is mandatory for all buildings and household content (at replacement value) with an excess of 10% per incident of damage or at least 200 CHF with a maximum value of 1000 CHF (approx. 680 Euros). Reinsurance is provided via two pools of direct insurers with compulsory membership. The pool system for cantonal property insurance offers unlimited cover whereas the private insurance pool for atmospheric damage only provides coverage for up to 25 billion CHF (17 billion Euros). The public insurers and the KGV link the risk transfer with the maintenance of the emergency services (fire service) and have the right to participate in Federal State Planning and Land Use Planning. Insurance density is almost 100% in Switzerland.	*M1/M2*
Spain	Legal obligation to insure against damaged caused by natural hazards and other ‘unusual events’ (terrorist attack, political unrest). Premiums are collected by private insurers as an add-on premium in building, contents, accident, life and occupational incapacity insurance and are passed on to the so-called Consorcio de Compensación de Seguros (Consorcio) which is a state monopoly insurer. The Consorcio is subsidised by an unlimited government guarantee. The insurance density is high, depending on the density in the individual sectors, up to 80%. Insurers' excess is usually around 10%.	*M2/M3*
France	Mandatory inclusion of all ‘uninsurable’ natural hazards (not including storm, frost, hail and snow load) in all contents insurance contracts by way of a uniform surcharge of 12% on the insurance premium with a low excess (e.g. 380 Euros per incident of damage to buildings and cars). Reinsurance is offered at a fixed cost through the state Caisse Centrale de Réassurance (CCR) with an unlimited state guarantee. High insurance density of close to 100%.	*M2/M3*
Great Britain	Pure private insurance with risk-based individual premium calculation. High market penetration (75% of private buildings, 95%-100% of mortgage credits) through coupling of natural hazard insurance and fire insurance which is required when taking out a mortgage to secure credit.	*M3/M4*
Germany	Pure private insurance with individual premium calculation in the case of flood damage (ZÜRS). Insurance against storm and hail is prevalent (95%). However, insurance density against other natural hazards is under 10%. German banks regularly require fire insurance for mortgages but no insurance against natural hazards. If an extreme event occurs ad-hoc relief is often provided for emergency and reconstruction. Victims of damage do not, however, have a legal right to this government relief and it is subsidiary to the provisions of private insurance.	*M4*
Austria	Insurance against storm, hail and snow load is fully private contracts without government regulation. Additonial coverage against other natural hazards (flooding, avalanche, landslides, etc.) is possible but rarely used (< 15%). Since 1986 Austria has had a government disaster fund financed by tax-payers. Victims of damage do not have a legal right to access this fund. It covers approximately 50% of damages (on average) if the claimant is not privately insured.	*M4/M5*



Sources: Ungern-Sternberg, 2002; Michel-Kerjan, 2001; Huber, 2006; Prettenthaler/Vetters, 2005, CEA 2007, Raschky/Weck-Hannemann 2007, Schwarze, R./ Wagner, G.G. 2007, Url, T./Sinabell, F. 2008, Bruggeman, V./Faure, M./Haritz, M. 2008, Fischer 2008, Huber 2008, Raschky, P. A./Schwindt, M./Schwarze, R./Weck-Hannemann, H. 2012.

Note: Mixed and transitional types are indicated by a slash (Mi/Mj, i≠j).

Trade-offs in risk sharing and regulation



Underlying economic problems

1. **Economies of scale** (pooling of risks) **&**
   economies of scope (synergies of infrastructure & insurance)

2. **Adverse selection** and **moral hazard**

3. **Charity hazard** (“samaritan dilemma” of public relief)

4. **Transaction costs** (especially advertising costs).

Searching for a coherent EU strategy (I): Green Paper on Adaptation to CC

- *Financial services and insurance markets will have to find **innovative ways** to respond efficiently to increasing exposure to climate-related risks*
- *The further **integration of European insurance markets** under the EU Financial Services Policy should be pursued*
- *The future risk structure of existing public and private natural disaster funds, including the **EU Solidarity Fund**, needs **to be (re-)assessed***

Source: Green Paper „Adapting to climate change in Europe“, p. 20.

→ ***Liberalisation and market integration!***

Searching for a coherent EU strategy (II): White Paper on Adaptation to CC

*"It should be evaluated whether certain private actors/sectors (such as those providing public services, critical infrastructure) need to be covered by **compulsory standard weather-related insurance**. In cases where insurance is not available, for example for buildings located in flood plains, **publicly supported** insurance schemes may be required. Due to the cross-border effects of climate change, there may be benefits in promoting **EU-wide insurance** as opposed to national or regional schemes".*

Source: White Paper „Adapting to climate change in Europe“, p. 13.

→ ***Top-down EU-wide unified system!***

Searching for a coherent EU strategy (III): Green Paper on Insurance of NatHaz

- ***Low rate of market penetration*** *in certain member states – how and why?*
- *Is* ***mandatory product bundling/compulsory insurance*** *needed?*
- *The further* ***integration of European insurance markets*** *under the EU Financial Services Policy should be pursued*
- *Risk-based or flat-rate pricing with caps ("****CatNat-basic****")?*
- *What* ***other solutions*** *could be offered? Would* ***EU action*** *in this are be useful?*

Source: Green Paper on the insurance of natural and man-made disasters, p. 8, 13.

→ ***Many open questions, but bottom up!***

When EU action could be beneficial – an economic perspective

- **National limits to pooling** in the face of increasing extreme events for insurance of last resort
- **Cross-border externalities** in **self-protection**
- Potentially adverse effects of **public infrastructure competition**

→ ***To be explored!***