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## Economics of Insurance against Climate Change

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## **Economics of insurance against climate change**

This PhD thesis examines consequences of, and opportunities due to, climate change for the insurance sector and the role that insurance can play in the design of policies to adapt to climate change in the Netherlands. Statistical analyses indicate that climate change may increase insured damage of certain natural hazards, such as hailstorms, which could have a considerable impact on the insurance sector. Flooding is a major climate change risk in the Netherlands for which no private insurance coverage exists. This thesis proposes to introduce a public-private partnership to compensate flood damage, with a role for the government as a reinsurer. Private flood insurance with risk based premiums increases financial security of individuals, and provides incentives for them to invest in measures that limit flood damage. Consumer demand for flood insurance is estimated using theories of decision making under risk that allow for 'bounded rationality' of individuals. In addition, empirical analyses are conducted of flood insurance demand using contingent valuation and choice modelling with surveys of some 1000 homeowners, while incorporating insights from behavioural economics. Estimates of willingness-to-pay for, and potential market penetrations of, flood insurance indicate that potential demand is no impediment for a partly private flood insurance market. Heterogeneity in flood insurance demand is estimated which suggests that risk perceptions play a large role in decisions about taking insurance. Observed relations between willingness to pay for flood insurance and flood risks are inconsistent with what would be expected on the basis of expected utility theory, the traditional economic theory of individual choice under risk.