

Insurers warn: climate change cannot be covered

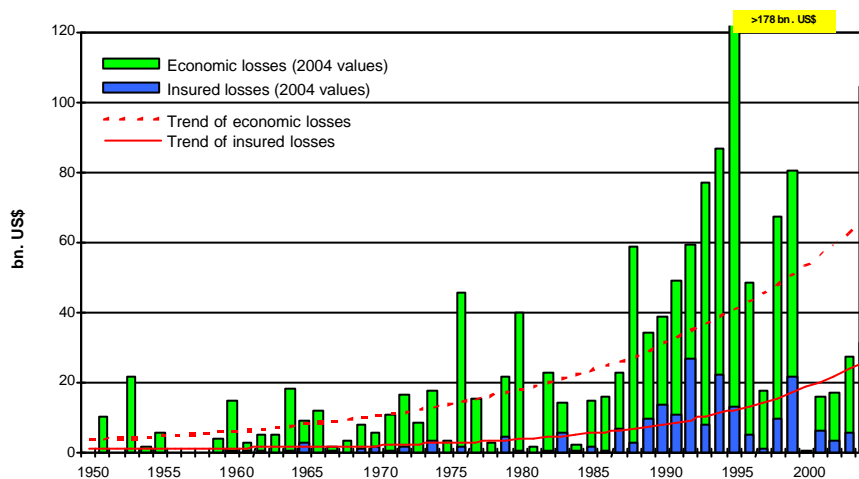
2005: the tipping point

Already the hurricane season of 2005 may cost insurers \$60 billion¹, more than double any previous year. Claims from Hurricane Katrina alone cost as much as five years' worth of natural disasters from all causes globally. The true cost is much greater – possibly \$250 billion² direct economic loss including uninsured losses and property blight, and even greater globally when higher oil prices and lost economic production is included- not to mention the over 1,000 dead and thousands of people traumatised.

Chart 1

Great Natural Disasters 1950 – 2004

Economic and insured losses



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The climate change link

Following the European heatwave of 2003, in which over 40,000 premature deaths occurred³, scientists estimate a greater than 90% chance that past human activity has more than doubled the risk of such an extreme event- in other words global warming probably killed 20,000 people in that event⁴. What can we say about hurricanes?

The extreme magnitude of damage caused by Katrina and Rita fits in to an overall trend of increasing losses from natural disasters over the last 50 years (chart 1). There are many factors, for example there are more expensive properties on the coast and near rivers due to increasing affluence, urbanisation and better transport facilities, so it is difficult to link the increase directly to global warming. However, climate change has raised global temperatures by about 0.7 degrees C; Summer 2005 is the hottest

¹ <http://uk.news.yahoo.com/06092005/325/brit-insurance-ceo-says-katrina-largest-loss.html>

² insurance losses are generally much lower than economic losses (chart 1); for example a conservative ratio of 1:4 would put the direct economic loss at \$240bn

³ This incorporates a re-estimate by Italy, from 4,000 deaths to over 20,000

⁴ Human contribution to the European heatwave of 2003, PETER A. STOTT, D. A. STONE & M. R. ALLEN
Nature **432**, 610–614 (2004)

ever observed in the Northern Hemisphere as a whole. World sea surface temperature (SST) has risen by around 0.5 degrees C in the last 30 years⁵, and that is a crucial factor in producing and intensifying hurricanes. At the same time, there has been a doubling in destructive potential of hurricanes⁶. In fact, SST is now well above the trend line in the Gulf of Mexico and the related hurricane-active areas⁷.

In the case of Katrina, a particularly intense hurricane occurred in a non-standard location. This induced a “step” effect; if the intensity had been somewhat reduced due to lower SST, then the levees would not have broken and the damage would have been considerably lower.

Therefore, if human induced climate change doubled the risk of a hurricane of Katrina’s intensity occurring in Louisiana, it could be argued that \$125bn, half of the cost of these hurricanes, was due to climate change, as in the case of the European heatwave.

Whilst it is not certain that the intensity or location of Katrina or Rita were a result of anthropogenic climate change, they do give an indication of what may happen in the future. Research predicts that the intensity and lifetime of hurricanes will increase, their location will change, and that an increase in intensity leads to a disproportionate increase in damage⁸.

The “Katrina effect” of high intensity and local unpreparedness could strike other oil-producing regions: Brazil, had its first-ever cyclone in 2004, Venezuela is on the fringe of the hurricane zone, and the Indian insurance industry had its largest single loss during the extreme 2005 monsoon, from oil-rig damage.

Even a wealthy country like USA is not immune. The estimated hurricane damage in 2005 represents 2% of USA’s current GDP. This compares to economists’ predictions that climate change will cause damage of 1.5% to 2% of gross world product by 2050-60. Apparently therefore we may be ahead of schedule.

What can insurers cover?

The global capital of the insurance industry available for catastrophe events is around \$200 billion. Thus the profitability and balance sheet of reinsurers and insurers will be affected by Katrina. Lloyds’ net loss is predicted to be \$2.6bn⁹, and the rating agencies have already downgraded several. If Rita had been as severe as initially predicted, some reinsurers might have faced major solvency problems. Problems could extend to the municipal bond guarantee market (Insurance Day), and will be particularly severe for offshore energy assets.

More events of this kind are likely to lead to exclusions, passing a further burden on society. This could lead to political pressure on insurers (e.g. in the interpretation of cover, because flood damage is often excluded) and increased, retrospective

⁵ Webster et al

⁶ Emanuel 2005

⁷ realclimate

⁸ Financial risk of climate change Association of British Insurers (2005)

⁹http://www.abi.org.uk/Display/Display_Popup/default.asp?Menu_ID=1090&Menu_All=1088,1090,0&Child_ID=565

legislation (e.g. in 2004, insurers were not permitted to apply deductibles to more than one loss on property damaged by sequential hurricanes in Florida).

The initial reaction to Katrina was fairly positive in the insurance market- commentators saw no difficulty in raising more capital in order to write catastrophe business at higher rates in 2006. On reflection, the points about global warming, hurricane cycles and politicians mean that insurers should be very wary of hurricane risk.

It is not standard practice for the catastrophe modelling companies to include projections of the impact of climate change in their models. In the preparations for 2006 renewals, it would be advisable to allow not just for a repetition of the 2004 and 2005 seasons, but for a further deterioration.

The way forward

Katrina and Rita show that economists' predictions of the impact of climate change are underestimates because damage will be highly variable, and bad years can have catastrophic, unpredictable and long-term repercussions due to the event intensity and poor disaster management.

Insurance companies can work with governments and stakeholders to prepare for further disasters. In the short term this means better disaster management, including proper catastrophe insurance arrangements- at the moment catastrophe reserves are under threat because of accounting harmonisation rules.

But the long term trend of climate change must be addressed also. Recently there have been initiatives amongst investors and insurers on climate change, aimed at transforming the world's economy away from fossil fuels, but these have moved slowly because of the absent political framework to encourage alternative energy better efficiency and more disclosure of corporate performance. Strong government leadership is required, **urgently**.