



Swiss Re's new sigma study reveals that natural catastrophes and man-made disasters caused economic losses of USD 218 billion and cost insurers USD 43 billion

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Zurich, 29 March 2011 – According to Swiss Re's latest *sigma* study, worldwide economic losses from natural catastrophes and man-made disasters were USD 218 billion in 2010, more than triple the 2009 figure of USD 68 billion. The cost to the global insurance industry was more than USD 43 billion, an increase of more than 60% over the previous year. Approximately 304 000 people died in these events, the highest number since 1976.

In 2010, severe catastrophes claimed significantly more lives than the previous year: around 304 000 were killed, compared to 15 000 in 2009. The deadliest event in 2010 was the Haiti earthquake in January, which claimed more than 222 000 lives. Nearly 56 000 people died during the summer heatwave in Russia. The summer floods in China and Pakistan also resulted in over 6 200 deaths.

Natural catastrophes cost the global insurance industry roughly USD 40 billion in 2010, while man-made disasters triggered additional claims of more than USD 3 billion. By way of comparison, overall insured losses totalled USD 27 billion in 2009. Lucia Bevere, one of the study's authors, says: "Insured losses were highest in North America in 2010, where they exceeded USD 15 billion. Despite very low hurricane losses due to the absence of hurricanes making direct landfall in the US, a series of lesser storms throughout the year resulted in this high figure."

High earthquake losses

Earthquake losses accounted for almost one third of all catastrophe losses in 2010. The February 2010 earthquake in Chile and the September earthquake in New Zealand were the two costliest events in 2010, and led to insured losses estimated at USD 8 billion and USD 4.4 billion respectively. Overall natural catastrophe claims in 2010 were in line with the 10-year average due to unusually modest US hurricane losses and in spite of notably high earthquake losses.

Incidentally, earthquake losses for 2011 will also be above average as the total insured claims for the February 22 earthquake in Christchurch, New Zealand, are estimated to be between USD 6 billion and USD 12 billion. The massive Tohoku earthquake that struck Sendai, Japan on March 11 is also expected to trigger significant insured losses.



Balz Grollmund, one of the study's authors, says: "Although no long-term trend of increasing global earthquake activity has emerged, the number of fatalities and insured losses from earthquakes are on the rise. The main reasons are population growth, the higher number of people living in urban areas as well as rising wealth and rapidly increasing exposures. Many of these rapidly growing urban areas are located in seismically active areas."

Ten events each triggered insured losses of at least USD 1 billion

In 2010, ten events triggered insured losses of USD 1 billion or more. The two biggest insured losses were caused by earthquakes – the February earthquake in Chile (USD 8 billion) and the September earthquake in Christchurch, New Zealand (USD 4.4 billion). The third costliest event was winter storm Xynthia in Western Europe, which led to insured losses of USD 2.8 billion. Three storms in the US and two storms in Australia also generated losses of over USD 1 billion. Property claims from the BP Deepwater Horizon explosion in the Gulf of Mexico are estimated at USD 1 billion. Given the complexity of the claims, the latter figure is still subject to substantial uncertainty. The overall insurance loss is higher, as liability losses are not included in the *sigma* numbers.

Natural catastrophes and man-made disasters cost society USD 218 billion in 2010

In 2010, worldwide economic losses from natural and man-made catastrophes were estimated at USD 218 billion. This represents a sharp increase over 2009, when economic losses totalled USD 68 billion. Asia was the hardest-hit region with total damages of approximately USD 75 billion. Pakistan and several large regions in China experienced extraordinary rainfall during the summer, resulting in devastating floods.

Thomas Hess, Chief Economist of Swiss Re, comments: "2010 was not only characterised by severe earthquakes that ranked among the deadliest, costliest and most powerful in history, but also by a series of extreme weather events, such as major floods. Some of these flood events sadly affected countries with poor emergency preparedness and underdeveloped insurance markets."

Hess continues: "These events show the urgent need to strongly improve prevention and post disaster management in order to reduce human suffering. The rapidly increasing wealth in emerging markets should also be used to address these problems. This wealth will also allow insurance to grow and close part of the large insurance protection gap in many emerging markets, the main reason why the financial protection against catastrophes is low in most emerging markets."

Table 1: The most costly insured catastrophe losses in 2010

Ranking	Insured losses (in USD m)	Date (start)	Event	Country
1	8000	27.02.2010	Earthquake (M _w 8.8) triggers tsunami	Chile
2	4453	04.09.2010	Earthquake (M _w 7.0)	New Zealand
3	2754	27.02.2010	Winter storm Xynthia	France/ Germany/ Spain et al
4	2165	04.10.2010	Thunderstorms, tornadoes, hail, floods	US
5	2050	23.12.2010	Floods caused by heavy rains, tropical cyclone Tasha	Australia
6	2000	12.05.2010	Storms with winds up to 130 km/h, hail	US
7	1231	13.03.2010	Storm, winds up to 120 km/h, heavy rain; floods	US
8	1079	22.03.2010	Storm, winds up to 120 km/h, hail, rain; mudslides	Australia
9	1070	06.03.2010	Storms, hail, rain; floods	Australia
10	1000	20.04.2010	Explosion on Deepwater Horizon	Gulf of Mexico, US

US natural catastrophe figures: with the permission of Property Claim Services (PCS)
Source: Swiss Re Economic Research & Consulting

Table 2: Catastrophes with the most fatalities in 2010

Ranking	Victims (dead and missing)	Date (start)	Event	Country
1	222 570	12.01.2010	Earthquake (M _w 7.0); aftershocks	Haiti
2	55 630	15.06.2010	Heat wave with temperatures up to 40 degrees Celsius	Russia
3	2 968	14.04.2010	Earthquake (M _w 6.9); aftershocks	China
4	2 490	29.05.2010	Floods caused by monsoonal heavy rain	China
5	1 980	21.07.2010	Floods caused by monsoonal heavy rain	Pakistan
6	1 765	08.08.2010	Floods caused by heavy rains; mudslides	China

Source: Swiss Re Economic Research & Consulting

Table 3: Earthquakes with the highest insured losses 1970–2010

Ranking	Insured losses (in USDm)	Date (start)	Event	Country	Victims (dead or missing)
1	20601	17.01.1994	Northridge earthquake (M _w 6.6)	US	61
2	8000	27.02.2010	Earthquake (M _w 8.8) triggers tsunami	Chile	562
3	4453	04.09.2010	Earthquake (M _w 7.0)	New Zealand	–
4	3538	17.01.1995	Earthquake in Kobe (M _w 7.2)	Japan	6 425
5	2309	26.12.2004	Earthquake (M _w 9.0) triggers tsunami	Indonesia	220 000

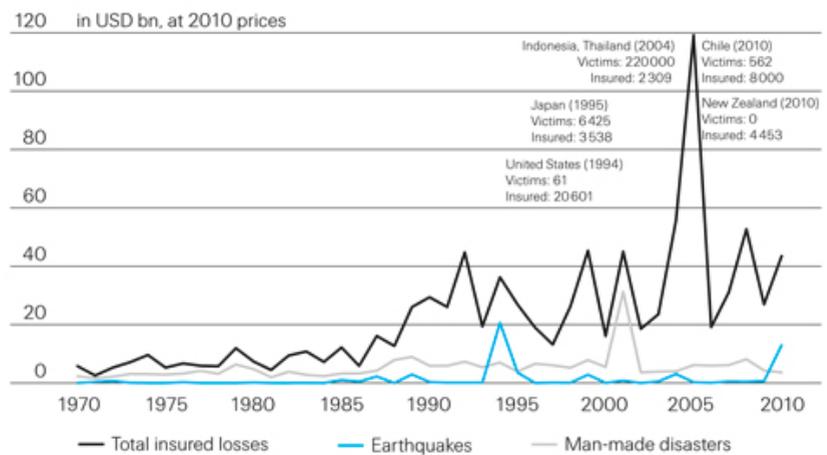
Source: Swiss Re Economic Research & Consulting

Table 4: Earthquakes with the most fatalities 1970–2010

Ranking	Victims (dead or missing)	Date (start)	Event	Country	Insured losses (in USD m)
1	255 000	28.07.1976	Earthquake (M _w 7.5)	China	–
2	222 570	12.01.2010	Earthquake (M _w 7.0); aftershocks	Haiti	100
3	220 000	26.12.2004	Earthquake (M _w 9.0) triggers tsunami	Indonesia	2 309
4	87 449	12.05.2008	Earthquake (M _w 7.9)	China	371
5	73 300	08.10.2005	Earthquake (M _w 7.6)	Pakistan, India	–

Source: Swiss Re Economic Research & Consulting

Figure 1: Insured catastrophe losses 1970–2010



Source: Swiss Re Economic Research & Consulting

Definitions and selection criteria for sigma catastrophe statistics:

Natural catastrophes	Loss events triggered by natural forces
Man-made disasters	Loss events associated with human activities
Insured catastrophe losses	Losses caused by the catastrophes covered by property insurance
Total economic losses	Also include the uninsured part of the property losses related to the catastrophes

Minimum selection criteria:

Total losses	USD 86.5m
Or: Insured property claims	Shipping: USD 17.4m Aviation: USD 34.8m Other: USD 43.3m
Or: Casualties	Dead or missing: 20 Injured: 50 Homeless: 2 000



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How to order this sigma study:

The English, German, French and Spanish versions of the *sigma* study No 1/2011, "Natural catastrophes and man-made disasters in 2010 – a year of devastating and costly events" are available electronically on Swiss Re's website: www.swissre.com/sigma. The versions in Chinese and Japanese will appear in the near future.

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