

ASIAN EARTHQUAKE AND TSUNAMI

An Insurance Perspective

Insurance Information Institute
March 29, 2005

While the economic losses from the Asian tsunami were substantial, the insurance losses arising from this event were modest. Here's why.

BACKGROUND

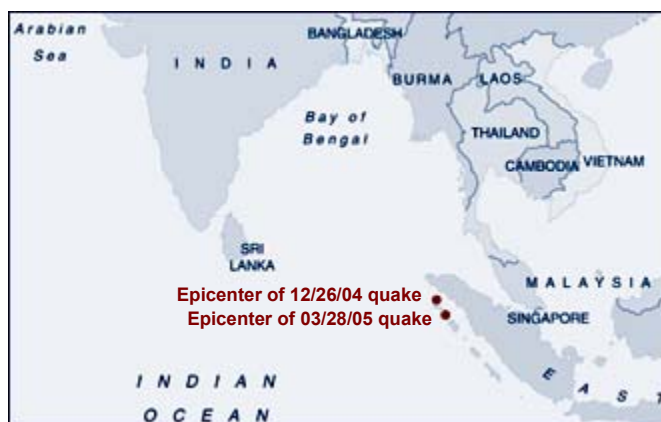
A magnitude 9.0 earthquake, centered about 100 miles west of the Indonesian island of Sumatra, 6.2 miles under the Indian Ocean, struck at around 7AM local time Sunday, December 26, 2004 (7PM ET Saturday, December 25). The earthquake triggered a series of tsunamis (tidal waves) that sent walls of water crashing into at least half a dozen countries across Southern Asia. Several powerful aftershocks followed the initial quake, one of magnitude 7.2.

On March 28, 2005 another powerful earthquake measuring 8.7 on the Richter scale occurred along the same fault line near the coast of northern Sumatra, Indonesia. While early reports from the region suggest that as many 2,000 people may have been killed by structures collapsed by the quake itself, the more recent event did not produce a tsunami.

Statistics published in March 2005 put the number of dead and missing from the December 26 event at more than 300,000, of which 182,340 are confirmed deaths, and 129,897 missing, according to Guy Carpenter¹. Thousands were injured and millions more left homeless after extensive flooding swamped the coastal areas of countries including Bangladesh, India, Indonesia, Malaysia, the Maldives Islands, Myanmar, Somalia, Sri Lanka, and Thailand. Property damage to residential and commercial buildings was extensive.

The earthquake was the fourth largest in the world since 1900 and the strongest since the 1964 magnitude 9.2 earthquake in Prince William Sound, Alaska. The most powerful earthquake on record occurred in Chile in 1960. The magnitude 9.5 quake caused \$550 million in damage (\$3.5 billion in current dollars), killed more than 2,000 people and injured more than 3,000. It also caused a tsunami, which caused additional destruction in Hawaii, Japan, the Philippines and the west coast of the United States.

Tsunami – a Japanese term – is a series of waves generated by large-scale seafloor displacements associated with large earthquakes.



¹ Guy Carpenter, *Tsunami: Indian Ocean Event and Investigation into Potential Global Risks*, March 2005.

INSURANCE COVERAGE IN DISASTER-AFFECTED REGION

While the loss of life was enormous and economic losses large, the insurance losses arising from this event were modest.

Non-life (i.e., property/casualty) insurance penetration rates are low in the countries affected by this disaster (see table below). In other words, relatively little insurance is purchased in the affected countries. Although overall insurance premium volume in South and East Asia continues to grow, penetration and growth rates for insurance products vary significantly between individual regions and markets.

Non-Life Insurance Premiums, 2003			
Country	Premium Volume \$ Million	Premiums Per Capita \$	Premiums as % of GDP
Bangladesh	102	0.7	0.20
India	3,712	4.0	0.62
Indonesia	1,733	8.0	0.83
Malaysia	2,154	87.2	2.05
Sri Lanka	137	7.0	0.74
Thailand	1,711	27.6	1.19

Source: Swiss Re, *Sigma*, No. 3/2004, *World Insurance in 2003: Insurance Industry on the Road to Recovery*.

As the table above indicates, there is relatively little penetration of non-life insurance products in the countries worst affected by this earthquake and associated tsunamis (India, Indonesia, Sri Lanka).

In Indonesia, for example, just \$8 per capita was spent on non-life insurance in 2003. Measured in terms of GDP, Indonesia has an insurance penetration rate of 0.83 percent for non-life business in 2003. Penetration of non-life insurance in Sri Lanka, the country perhaps suffering the most severe impact from the tsunamis, is even lower.

By comparison, a total of \$1,980 per capita was spent on non-life insurance in the U.S. in 2003, nearly 250 times as much as in Indonesia and more than 280 times that in Sri Lanka. Measured in terms of GDP, non-life insurance premiums as a percentage of GDP (i.e., penetration rate) in the United States were equal to 5.23 percent of GDP in 2003, more than six times that of Indonesia and seven times that of Sri Lanka.

Property Coverage

Insurance coverage for earthquake and tsunami damage varies by country and region. Typically, property policies offer coverage as follows:

- Standard Fire Policy – covers perils such as fire, lightning, explosion **only**.
- Extended Coverage - standard fire policy plus additional coverage purchased separately. The extended coverage may include earthquake, fire/explosion following an earthquake, tsunami and volcanic eruption.
- “All Risks” Policy – typically covers unforeseen, sudden and accidental physical loss/damage/destruction to the insured’s property, subject to standard exclusions. Flood risk may be covered under this policy.

The extent of insured losses will depend on the take-up of coverage by insureds. Policy terms can vary considerably from country to country.

INSURED LOSS ESTIMATES

Due to the low insurance take-up in the affected countries, insured losses associated with the December 26 earthquake and tsunamis were modest relative to the scale of the disaster. In January 2005, Swiss Re estimated insured losses from the disaster at around \$5 billion. More recent insured loss estimates range from \$2.5 billion to \$4 billion.

Economic losses, in contrast, which include both insured and uninsured losses, were much higher, totaling some \$13 billion to \$14 billion, according to Munich Re and Swiss Re, respectively. Again, given the enormous scale of human suffering, this figure appears rather moderate, but Swiss Re notes that this is due to the low level of property values in the economies affected. Nevertheless, the December 26 earthquake and tsunami event qualifies as the fourth costliest disaster in 2004 in terms of economic losses, behind the Japanese earthquake in October (\$28 billion), hurricane Charley (\$21.3 billion) and hurricane Ivan (\$20 billion).

While it could be some time before final figures emerge, Guy Carpenter reports that insured losses were relatively modest as no major airports, ports or industrial complexes were hit. Most of the claims are expected to come from property damage to tourist resorts, marine risks and business interruption.

Depending on the level of property damage and amount of coverage in play in each affected country, local insurers may have experienced significant losses. (See attached data for the leading non-life insurance companies in Bangladesh, India, Indonesia, Malaysia, Sri Lanka, and Thailand).

Foreign insurers operating in the region, primarily European and Asian, also likely experienced some large claims. These claims mostly arose from hotel and resort properties as well as facilities owned or operated by foreign multinationals.

For example, in Thailand, Guy Carpenter notes that the final insurance payout to affected areas will not reflect the full extent of the damage because many small businesses were not insured or did not have adequate cover. However, insurance penetration in Thailand is higher compared to most other affected countries and many of the larger hotels and resorts had insurance coverage that included business interruption.

Thailand's Department of Insurance estimates insured damage of around \$1 billion, with most of the risk reinsured in the international market. Catastrophe modeling company Risk Management Solutions (RMS) predicts insured losses in Thailand of between \$500 million and \$1 billion.

2004: A RECORD YEAR FOR DISASTER LOSSES

In an updated report published in January 2005, Swiss Re estimated that about 332 natural and man-made catastrophes worldwide in 2004 caused total financial losses of \$123 billion, of which \$49 billion were covered by property insurance.

The 332 catastrophes claimed the lives of more than 300,000 people -- the highest death toll for decades. The tsunami in the Indian Ocean alone left 280,000 dead or missing, according to Swiss Re statistics as of January 2005. It notes that the precise number of victims will probably never be known.

Swiss Re noted that the \$49 billion in insured losses made 2004 another record year in terms of insurance claims after 1992, 1999 and 2001. About 94 percent of the claims were attributable to natural catastrophes, it said.

By comparison, in 1992 insured losses adjusted for inflation were in the region of \$38 billion (including Hurricane Andrew); in 2001 they reached \$37 billion (including the September 11 terrorist attack) and in 1999 they totaled \$36 billion (including the Lothar and Martin winter storms).

The trend towards higher losses is due in part to rising population densities and value concentrations as well as growing urbanization of exposed areas, Swiss Re said. A major part of 2004's \$123 billion in total catastrophe losses occurred in the industrialized nations, where catastrophes impacted a high concentration of property assets, it noted.

The table below shows the 10 worst catastrophes in terms of victims from 1970 to 2004. The Asia earthquake and tsunami already ranks as the second worst disaster in terms of loss of life and could rise still higher once the full extent of the death toll becomes known.

The 10 worst catastrophes in terms of victims 1970-2004			
Victims*	Date	Event	Country
300,000	Nov. 14, 1970	Storm and flood catastrophe	Bangladesh
280,000	Dec. 26, 2004	Seaquake (Richter 9.0) & tsunamis in Indian Ocean	Indian Ocean Rim, East Africa
255,000	July 28, 1976	Earthquake in Tangshan (Richter 7.5)	China
138,000	April 29, 1991	Tropical cyclone Gorky	Bangladesh
66,000	May 31, 1970	Earthquake (Richter 7.7)	Peru
50,000	June 21, 1990	Earthquake in Gilan (Richter 7.7)	Iran
26,271	Dec. 26, 2003	Earthquake in Bam (Richter 6.5)	Iran
25,000	Sept. 16, 1978	Earthquake in Tabas (Richter 7.7)	Iran
25,000	Dec. 7, 1988	Earthquake in Armenia (Richter 6.9)	Armenia, form. USSR
23,000	Nov. 13, 1985	Volcanic eruption on Nevado del Ruiz	Colombia

* Dead and missing

Source: Swiss Re, *Sigma*, No. 1/2005, *Natural catastrophes and man-made disasters in 2004: more than 300,000 fatalities, record insured losses.*

Bangladesh

**POPULATION:**

138,448,210 (est. July 2003)

GDP:

\$238.2 billion (2002 est.)

**LEADING NONLIFE
INSURANCE COMPANIES, 2000**

Company	Written premiums*	
	BDT Mn	USD Mn
Sadharan Bima Corporation	617.4	11.8
Pragati	301.4	5.8
Green Delta	301.3	5.8
Reliance	255.0	4.9
Rupali	200.2	3.8
Phoenix	196.2	3.8
Peoples	195.1	3.7
Bangladesh General	184.1	3.5
Prime	180.3	3.5
Federal	171.1	3.3

*Gross written premiums.

**LEADING LIFE
INSURANCE COMPANIES**

Data not available.

ASSOCIATION:

Bangladesh Insurance Association
Rupali Bima Bhaban
7 Rajuk Avenue
Dhaka 1000, Bangladesh
Tel: (880) 2-955-7330
Fax: (880) 2-955-7330

CURRENCY:

taka (BDT)

EXCHANGE RATES:

taka per US dollar — 57.89 (2002),
55.81 (2001), 52.14 (2000), 49.09
(1999), 46.91 (1998)

REGULATORY BODY:

Chief Controller of Insurance
Department of Insurance
Ministry of Commerce
Sadharan Bima Bhaban - 2
139 Mothijheel Commercial Area
Dhaka 1000, Bangladesh
Tel: (880) 2-956-5548
Fax: (880) 2-956-5056

DIRECT PREMIUMS WRITTEN, 2003

Total premiums:	\$297 (U.S. \$ millions)
Nonlife premiums:	102
Life premiums:	194

Sources: Swiss Re (premium data); Axco Insurance Information Service (leading cos.); U.S. Central Intelligence Agency (economic/demographic data).

India

**POPULATION:**

1,049,700,118 (est. July 2003)

GDP:

\$2.664 trillion (2002 est.)

**LEADING NONLIFE
INSURANCE COMPANIES, 2003**

Company	Written premiums*	
	INR Mn	USD Mn
New India	39,212.4	806.7
United India	29,680.6	610.6
National	28,635.8	589.1
Oriental	28,034.1	576.7
ECGC	3,747.8	77.1
Bajaj Allianz	2,964.8	61.0
Tata AIG	2,339.3	48.1
IFFCO-Tokio	2,133.2	43.9
ICICI Lombard	2,034.8	41.9
Reliance	1,856.7	38.2

*Gross written premiums.

**LEADING LIFE
INSURANCE COMPANIES, 2003**

Company	Gross written premiums	
	INR Mn	USD Mn
LIC	546,284.9	11,238.1
ICICI Prudential	4,176.2	85.9
HDFC Standard	1,488.2	30.6
Birla Sunlife	1,439.2	29.6
Max New York	965.9	19.9
SBI Life	723.9	14.9
Tata AIG	717.7	14.8
Allianz Bajaj	691.7	14.2
OM Kotak	403.2	8.3
ING Vysya	211.6	4.4

ASSOCIATION:

Insurance Institute of India
Universal Insurance Building
P Mehta Road
Mumbai 400 001, India
Tel: (91) 22-287-2923

CURRENCY:

Indian rupee (INR)

EXCHANGE RATES:

Indian rupees per US dollar —
48.61 (2002), 47.19 (2001), 44.94
(2000), 43.06 (1999), 41.26 (1998)

REGULATORY BODY:

Insurance Regulatory & Development
Authority
Pasisrama Bhavanam
5-9-58/b, Basheer Bagh
Hyderabad 500 004, India
Tel: (91) 40-682-0964
Fax: (91) 40-682-3334

DIRECT PREMIUMS WRITTEN, 2003

Total premiums:	\$17,302 (U.S. \$ millions)
Nonlife premiums:	3,712
Life premiums:	13,590

Sources: Swiss Re (premium data); Axco Insurance Information Service
(leading cos.); U.S. Central Intelligence Agency (economic/demographic data).

POPULATION:
234,893,453 (est. July 2003)

GDP:
\$714.2 billion (2002 est.)



Indonesia

ASSOCIATION: Insurance Council of Indonesia
Jl. Majapahit 34 Blok V/29
Jakarta 10160, Indonesia
Tel: (62) 21-345-4387
Fax: (62) 21-345-4307
<http://www.dai.or.id/>

CURRENCY: Indonesian rupiah (IDR)

EXCHANGE RATES: Indonesian rupiahs per US dollar —
9,311.19 (2002), 10,260.8 (2001),
8,421.77 (2000), 7,855.15 (1999),
10,013.6 (1998)

REGULATORY BODY: Directorate of Insurance
Ministry of Finance
Dr Wahidin Street No.1
Building A 8th Floor
Jakarta 10710, Indonesia
Tel: (62) 21-345-0926
Fax: (62) 21-350-9118

DIRECT PREMIUMS WRITTEN, 2003

Total premiums: \$3,107 (U.S. \$ millions)
Nonlife premiums: 1,733
Life premiums: 1,373

Sources: Swiss Re (premium data); Axco Insurance Information Service (leading cos.); U.S. Central Intelligence Agency (economic/demographic data).

LEADING NONLIFE INSURANCE COMPANIES, 2002

Company	Written premiums*	
	IDR Mn	USD Mn
Tugu Pratama	1,609.3	172.8
Jasa Indonesia	915.4	98.3
Central Asia	792.1	85.1
Astra Buana	680.4	73.1
Sinar Mas	638.0	68.5
Allianz Utama	558.4	60.0
AIU Indonesia	500.5	53.8
Wahana Tata	482.4	51.8
Mitsui Sumitomo	366.1	39.3
Tokio Marine	306.7	32.9

*Gross written premiums.

LEADING LIFE INSURANCE COMPANIES, 2002

Company	Gross written premiums	
	IDR Bn	USD Mn
Bumiputera 1912	2,055.0	220.7
AIG Lippo Life	1,716.9	184.4
Jiwasraya	958.5	102.9
Indolife Pensiontama	792.7	85.1
Manulife Indonesia	667.8	71.7
Jiwa Sequis Life	591.7	63.6
Prudential Life	476.8	51.2
AIA Indonesia	441.4	47.4
Allianz Life	417.2	44.8
Bringin Jiwa Sejahtera	394.0	42.3

Malaysia



POPULATION:
23,092,940 (est. July 2003)

GDP:
\$198.4 billion (2002 est.)

LEADING NONLIFE INSURANCE COMPANIES, 2002

Company	Written premiums*	
	MYR Mn	USD Mn
Kurnia	921.7	242.6
MNI	431.7	113.6
Allianz General	416.9	109.7
MAA	396.3	104.3
Uni.Asia General	332.0	87.4
American Home	311.1	81.9
Hong Leong	306.9	80.8
Aviva	264.0	69.5
Mitsui	235.1	61.9
Lonpac	223.8	58.9

*Gross written premiums.

LEADING LIFE INSURANCE COMPANIES, 2002

Company	Gross written premiums	
	MYR Mn	USD Mn
Great Eastern	3,050.5	802.8
AIA	1,537.9	404.7
Prudential	1,159.0	305.0
ING	901.2	237.2
MAA	552.6	145.4
Hong Leong	434.6	114.4
Asia Life	300.9	79.2
MCIS Zurich	278.6	73.3
John Hancock	270.0	71.1
MNI	206.6	54.4

ASSOCIATION:

General Insurance Association of
Malaysia
3rd Floor, Wisma PIAM
150, Jalan Tun Sambathan
50782 Kuala Lumpur, Malaysia
Tel: (60) 3-2274-7399
Fax: (60) 3-2274-5910
<http://www.piam.org.my/>

CURRENCY:

ringgit (MYR)

EXCHANGE RATES:

ringgits per US dollar —
3.8 (2002), 3.8 (2001), 3.8 (2000),
3.8 (1999), 3.92 (1998)

REGULATORY BODY:

Insurance Supervision Department
13th Floor, Block A
Jalan Dato' Onn
50480 Kuala Lumpur, Malaysia
Tel: (60) 3-2698-8044
Fax: (60) 3-2697-0597

DIRECT PREMIUMS WRITTEN, 2003

Total premiums:	\$5,609 (U.S. \$ millions)
Nonlife premiums:	2,154
Life premiums:	3,455

Sources: Swiss Re (premium data); Axco Insurance Information Service (leading cos.); U.S. Central Intelligence Agency (economic/demographic data).

Sri Lanka



POPULATION:

19,742,439 (est. July 2003)

GDP:

\$73.7 billion (2002 est.)

LEADING NONLIFE INSURANCE COMPANIES, 2003

Company	Written premiums*	
	SLR Mn	USD Mn
Sri Lanka	4,866.1	54.4
Ceylinco	3,721.2	41.6
Janashakthi	1,407.3	15.7
Union	1,265.0	14.2
Eagle	1,072.7	12.0
Asian Alliance	271.1	3.0
National	254.7	2.8
HNB Assurance	243.4	2.7
Hayleys AIG	186.5	2.1
Co-operative	161.1	1.8

*Gross written premiums.

LEADING LIFE INSURANCE COMPANIES, 2003

Company	Gross written premiums	
	SLR Mn	USD Mn
Sri Lanka	3,239.0	33.9
Ceylinco	3,042.7	31.8
Eagle	2,169.8	22.7
Union	1,096.1	11.5
Janashakthi	416.2	4.4
Asian Alliance	274.5	2.9
National	157.5	1.6
HNB	104.4	1.1
Co-operative	44.1	0.5
ATL	40.0	0.4

ASSOCIATION:

Insurance Association of Sri Lanka
c/o Union Assurance Ltd.
Union Assurance Centre
20 St Michaels Rd.
Colombo 3, Sri Lanka
Tel: (94) 1-343-061

CURRENCY:

Sri Lankan rupee (LKR)

EXCHANGE RATES:

Sri Lankan rupees per US dollar —
95.66 (2002), 89.38 (2001), 77.01
(2000), 70.64 (1999), 64.45 (1998)

REGULATORY BODY:

Insurance Board of Sri Lanka
Level 11 East Tower
World Trade Centre
Echelon Square
Colombo 1, Sri Lanka
Tel: (94) 1-437-086
Fax: (94) 1-439-149

DIRECT PREMIUMS WRITTEN, 2003

Total premiums:	\$239 (U.S. \$ millions)
Nonlife premiums:	137
Life premiums:	102

Sources: Swiss Re (premium data); Axco Insurance Information Service (leading cos.); U.S. Central Intelligence Agency (economic/demographic data).

Thailand



POPULATION:

64,265,276 (est. July 2003)

GDP:

\$445.8 billion (2002 est.)

LEADING NONLIFE INSURANCE COMPANIES, 2002

Company	Written premiums*	
	THB Mn	USD Mn
Viriyah	7,430.9	173.0
Dhipaya	6,572.9	153.0
Bangkok	5,422.3	126.2
Deves	2,913.1	67.8
The Safety	2,245.1	52.3
Synmunkong	2,084.6	48.5
Sampanth	2,069.4	48.2
New Hampshire	1,914.6	44.6
Aviva	1,764.5	41.1
Thai Zurich	1,333.9	31.0

*Gross written premiums.

LEADING LIFE INSURANCE COMPANIES, 2002

Company	Gross written premiums	
	THB Mn	USD Mn
AIA	58,758.4	1,367.7
Thai Life	18,384.0	427.9
Ayudhya CMG	8,884.2	206.8
Bangkok	6,848.5	159.4
Ocean	6,637.5	154.5
Muang Thai	5,171.1	120.4
Nationwide	2,419.9	56.3
South East	1,699.2	39.6
Zurich National	1,442.4	33.6
Siam Commercial	1,399.7	32.6

ASSOCIATION:

General Insurance Association
223 Soi Ruam Rudee
Wireless Road
Bangkok 10330, Thailand
Tel: (66) 256-6032-8
Fax: (66) 256-6039-40
<http://www.gaif.org/>

CURRENCY:

baht (THB)

EXCHANGE RATES:

baht per US dollar —
42.96 (2002), 44.43 (2001),
40.11 (2000), 37.81 (1999),
41.36 (1998)

REGULATORY BODY:

Department of Insurance
Ministry of Commerce
44/100 Sanambinnam Road
Nonthaburi, 11000 Thailand
Tel: (66) 547-4565
Fax: (66) 547-4571

DIRECT PREMIUMS WRITTEN, 2003

Total premiums:	\$4,932 (U.S. \$ millions)
Nonlife premiums:	1,711
Life premiums:	3,222

Sources: Swiss Re (premium data); Axco Insurance Information Service (leading cos.); U.S. Central Intelligence Agency (economic/demographic data).