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Asia Pacific Catastrophe Reinsurance

An Executive Summary



Key Contacts

Tony Gallagher | Chief Executive Officer, Asia Pacific Region

Tony.Gallagher@guycarp.com | +852 2582 3535

GC Analytics

Michael Owen | Managing Director, Head of GC Analytics, Asia Pacific

Michael.G.Owen@guycarp.com | +65 6922 1951

Imelda Powers | Senior Cat Management Advisor, Asia Pacific

Imelda.Powers@guycarp.com | +86 10 6533 4129

Australia, New Zealand, Pacific Region

Andy Eisele | CEO, Pacific Region

Andre.Eisele@guycarp.com | +61 2 8864 8559

China

Lawrence Liao | Chairman and CEO, China Operations

Lawrence.Liao@guycarp.com | +852 2582 3530

India

Clive Baker | Managing Director

Clive.S.Baker@guycarp.com | +44 20 7357 1315

Japan

Edward Fenton | Managing Director, Regional Manager for Japan

Edward.Fenton@guycarp.com | +44 20 7357 3513

South East Asia and Korea

Bengt Johnsen | Managing Director

Bengt.Johnsen@guycarp.com | +65 6922 1995

Taiwan

Danny Yeung | Managing Director

Danny.Yeung@guycarp.com | +852 2582 3523

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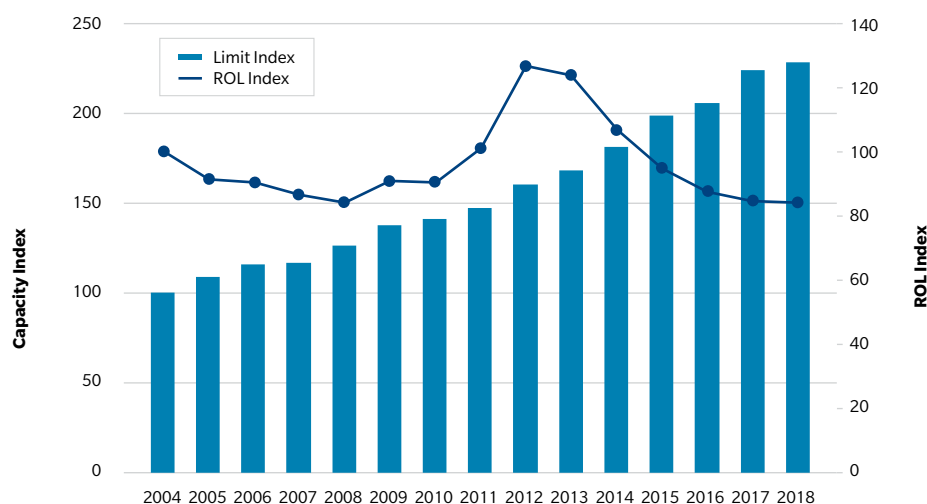


Executive Summary

For buyers of catastrophe reinsurance in the Asia Pacific region, pricing has remained largely flat during 2018. The region has experienced losses during the year to date, and at the time of writing, it is expected that a proportion of these will impact reinsurers. At the same time, market capacity remains abundant and underlying reinsurance market conditions are favorable for buyers. The effect of the 2018 losses on market sentiment going forward is not fully understood.

As widely predicted, the year 2017 finished with one of the largest global insured catastrophe loss totals ever. The year 2017 was only the third year in history that the global insured loss total exceeded USD 100 billion. As we mentioned in last year's report, most of the losses were generated in territories away from the Asia Pacific region. The upshot was that catastrophe reinsurers in the Asia Pacific region had an average year, despite some low-level attritional losses. The price increases experienced by North American buyers at the January 2018 renewals were not mirrored in the region. Overall price levels for Asia Pacific reinsureds have basically remained at a stable level year on year.

FIGURE 1. Guy Carpenter Asia Pacific Limit and ROL indices



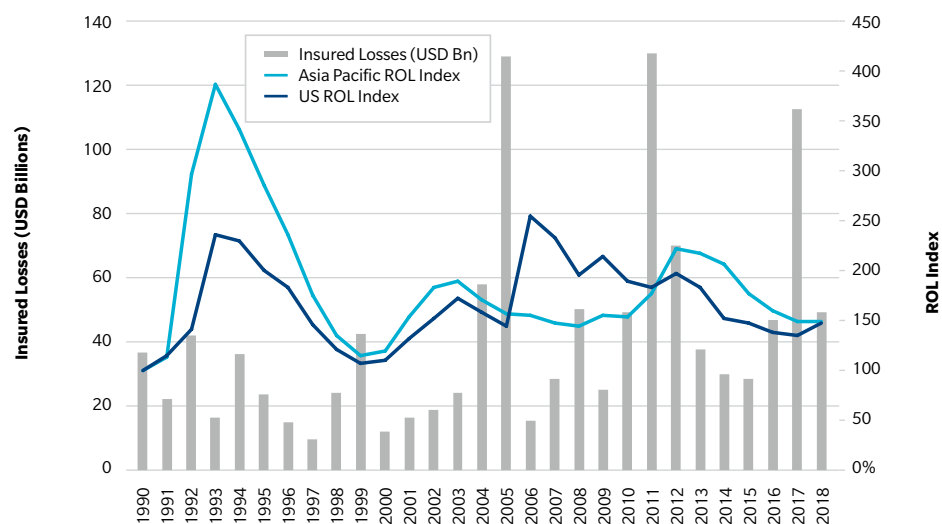
Source: Guy Carpenter Analytics

As a whole, capacity purchased across the region increased modestly, continuing the upwards trend of the past several years.

Globally, 2018 has generally been a benign year for catastrophe loss, but there were significant events that occurred in the Asia Pacific region, in particular weather events in Japan and China. These events will impact catastrophe reinsurers in the region and, if current estimates are correct, are likely to push the regional catastrophe reinsurance combined ratio for the year into the 100 percent to 200 percent range. In recent

historical context it is worth noting that a ratio in that range is still much lower than the over 900 percent recorded in 2011. Furthermore, the Asia Pacific share of world catastrophe reinsurance premiums is limited to about 15 percent of the whole, so in the absence of any large losses in the wider catastrophe reinsurance market, such numbers should be manageable for reinsurers.

FIGURE 2. Insured Cat Losses and Cat Reinsurance pricing indices by year



Source: Guy Carpenter Analytics

The year 2017 was one of the most impactful ever for insured catastrophe losses, with price movements in the reinsurance market following. As in the other two earlier years where insured losses exceeded USD 100 billion (2005 and 2011), the market was able to distinguish between loss generating and non-loss generating geographies.

Losses

Typhoon Jebi was the largest event in Asia Pacific by a wide margin. A series of typhoons, earthquakes, floods and other weather-related losses also impacted the region.

Typhoon Jebi

In early September, Typhoon Jebi made first landfall in Japan on Shikoku island (Tokushima prefecture), with a second landfall near Kobe, Hyogo prefecture. According to meteorological reports, it was the strongest typhoon to hit Japan in 25 years. Insurance losses are expected to exceed USD 5 billion, but the full loss picture is not yet clear. The reinsurance impact is likely to be significant.

Other typhoon and weather-related losses in Japan

2018 has been an active year for weather-related perils. In July, Typhoon Prapiroon and associated heavy rains led to severe floods and mudslides. In mid-September, the General Insurance Association of Japan (GIAJ) reported paid claims from these events totalling JPY 165 billion (approximately USD 1.5 billion); the final total insured loss cost is predicted to exceed USD 2 billion.

More recently, Japan was hit by Typhoon Trami. Again the insured loss cost is likely to be significant, but is not yet known at this time.

Earthquakes in Japan

In June, an earthquake measuring Magnitude (Mw) 6.1 struck in northern Osaka, and in early September a Mw 6.6 earthquake occurred in the northern Japanese island of Hokkaido. According to the GIAJ, as of September 10, the total value of claims paid for the June event stood at JPY 86.6 billion (USD 770 million). The Hokkaido event disrupted power services throughout the island, leaving millions of residents without power, and caused significant damage to residential and industrial buildings.

Typhoon Mangkhut

In September, Typhoon Mangkhut made landfall in the Philippines as a Category 5 storm on the Saffir-Simpson scale. It brought hurricane force winds to Hong Kong and Macau. Mangkhut resulted in considerable damage to these densely populated areas, and a typhoon alert of Level 10 (the highest level) was issued by the Hong Kong Observatory. Insurance losses are currently expected to be less than USD 1 billion.

Kerala Floods

In August 2018 – monsoon season – Kerala, a state in the southwestern part of India, was affected by severe flooding caused by heavy rainfall. The flooding resulted in 483 fatalities and at least a million people were evacuated from their homes. It was the worst flooding to occur in Kerala since 1924. Media reports indicated that economic losses will be close to USD 4.25 billion and insured losses are likely to be as high as INR 45 billion (USD 0.64 billion).

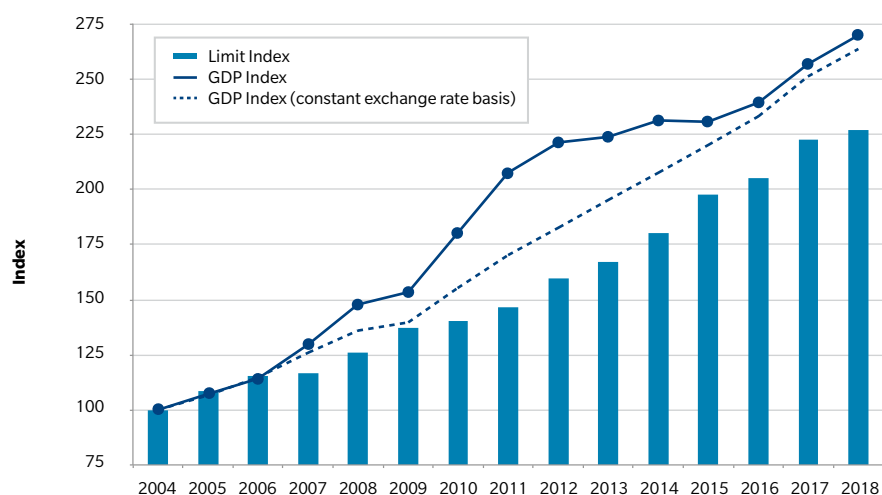
Earthquakes in Indonesia

In August 2018, an earthquake of Mw 6.9 occurred on the Indonesian island of Lombok, resulting in over 400 fatalities. The cost of damage to homes, infrastructure and other property is estimated to be approximately IDR 5 trillion (USD 342 million). The areas of the island most affected were East Lombok Regency, North Lombok Regency, Central Lombok Regency and Mataram City. Insured losses from these regions are estimated to be between IDR 10 billion and IDR 100 billion (USD 0.66 million to USD 6.6 million), according to MAIPARK, the specialist reinsurer owned by all licensed and general insurers in Indonesia.

On September 28, 2018, an earthquake of Mw 7.5 struck just off the central island of Sulawesi, setting off a tsunami that engulfed the coastal city of Palu. Nearly 2,000 fatalities have been reported as of October 8, with an estimated 5,000 people still missing, according to Indonesia's National Disaster Mitigation Agency.

According to MAIPARK, insurance losses caused by the earthquake, tsunami and liquefaction are estimated to reach IDR 170 billion (USD 11.2 million). Insurance and reinsurance penetration in the area is low. This event is an example of the severe protection gap for many perils that exists at an individual and regional level in many parts of the world. Risk transfer is playing an increasingly critical role in providing financial liquidity in catastrophe-affected areas, which aids recovery and longer-term economic well-being. Without the benefit of outside capital flowing into an area after an event, the burden falls on government and aid organizations, creating the potential for long-term negative impacts.

FIGURE 3. Guy Carpenter Asia Pacific limit index vs GDP growth



Source: Guy Carpenter Analytics

Catastrophe Reinsurance Cover Trends

Regionalization of Cover

As multinational companies have expanded across Asia, they have found that country-specific, local practices and regulatory realities have sometimes led to reinsurance decisions that were in conflict with the goals of the wider multinational group. As a result, insurers are evolving to a more centralized or Asia-regionalized reinsurance strategy.

Earnings Protection Versus Capital Protection

As has occurred on a global basis, in the Asia Pacific region increasing amounts of catastrophe protection are being bought to protect earnings rather than simply protect capital. Generally, the most suitable vehicle for buyers wishing to achieve this goal is through aggregate excess of loss covers. Purchases of these covers are growing, particularly in Australia and Japan. In some cases, a series of typhoon events in Japan caused aggregate covers to be significantly impacted, which will likely lead to some volatility in pricing in 2019.

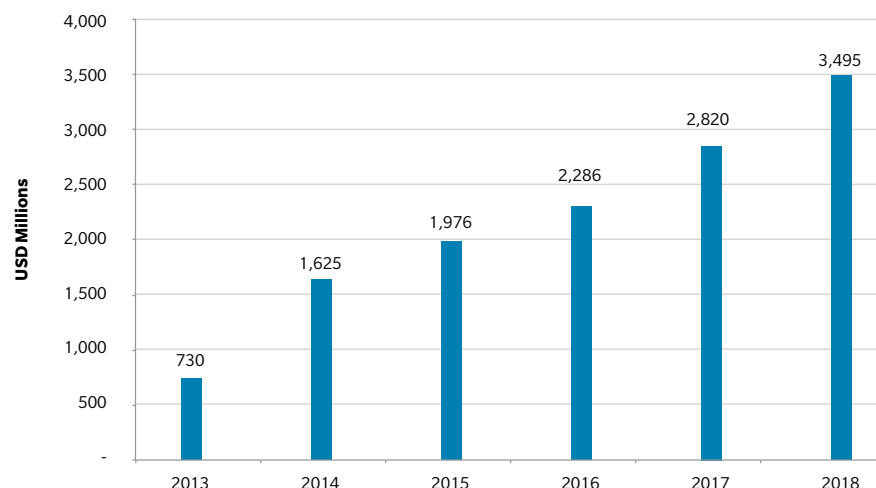
Reinsurers hungry for “pay back,” however, are surely aware of the abundance of new capital that exists that is willing to write this business if pricing multiples increase from their current level by any significant amount.

Convergence Capital

As a source for risk transfer capital, traditional reinsurance capital continues to be supplemented by convergence capital – exhibiting steady growth in order to meet the demands of risk transfer counterparties. Commonly referred to as insurance-linked securities, the collection of collateralized reinsurance, catastrophe bonds, industry loss warranties and sidecars has reached an estimated USD 82 billion, approximately 20 percent of the global catastrophe risk limit.

The amount of 144A catastrophe bond limit outstanding that covers risk in the Asia Pacific region increased by 24 percent since September 2017 to just under USD 3.45 billion, surpassing the USD 3 billion mark for the first time. Several new catastrophe bond issuances during the year benefited Japanese buyers. Cedents based in the Asia Pacific region account for approximately 12 percent of the global catastrophe bond limit outstanding, and capital markets investors have the appetite for more risk in the region. Cedents seeking to diversify reinsurance capital sources are likely to continue to turn to this sector.

FIGURE 4. Outstanding catastrophe bonds in the Asia Pacific region Sept 2013 – Sept 2018



Flood in Asia

Globally, flood is the most significant under-modeled peril and of particular concern for the Asia Pacific region, where in excess of USD 500 billion of GDP is exposed to flood risk every year — the majority of which is not insured.

One of the key factors influencing the insurance coverage gap is a lack of understanding of flood risk. New data products, such as hazard maps, have recently become available from both private- and public-sector sources. These products help the insurance industry understand aspects of the flood hazard, at least in terms of potential flood extents. This hazard data needs to be combined with other data such as probabilistic event sets and defense information, and brought into loss calculation frameworks that allow insurers and reinsurers to quantify the financial risk so they can make informed business decisions.

Asia Pacific Catastrophe Assessment Tools

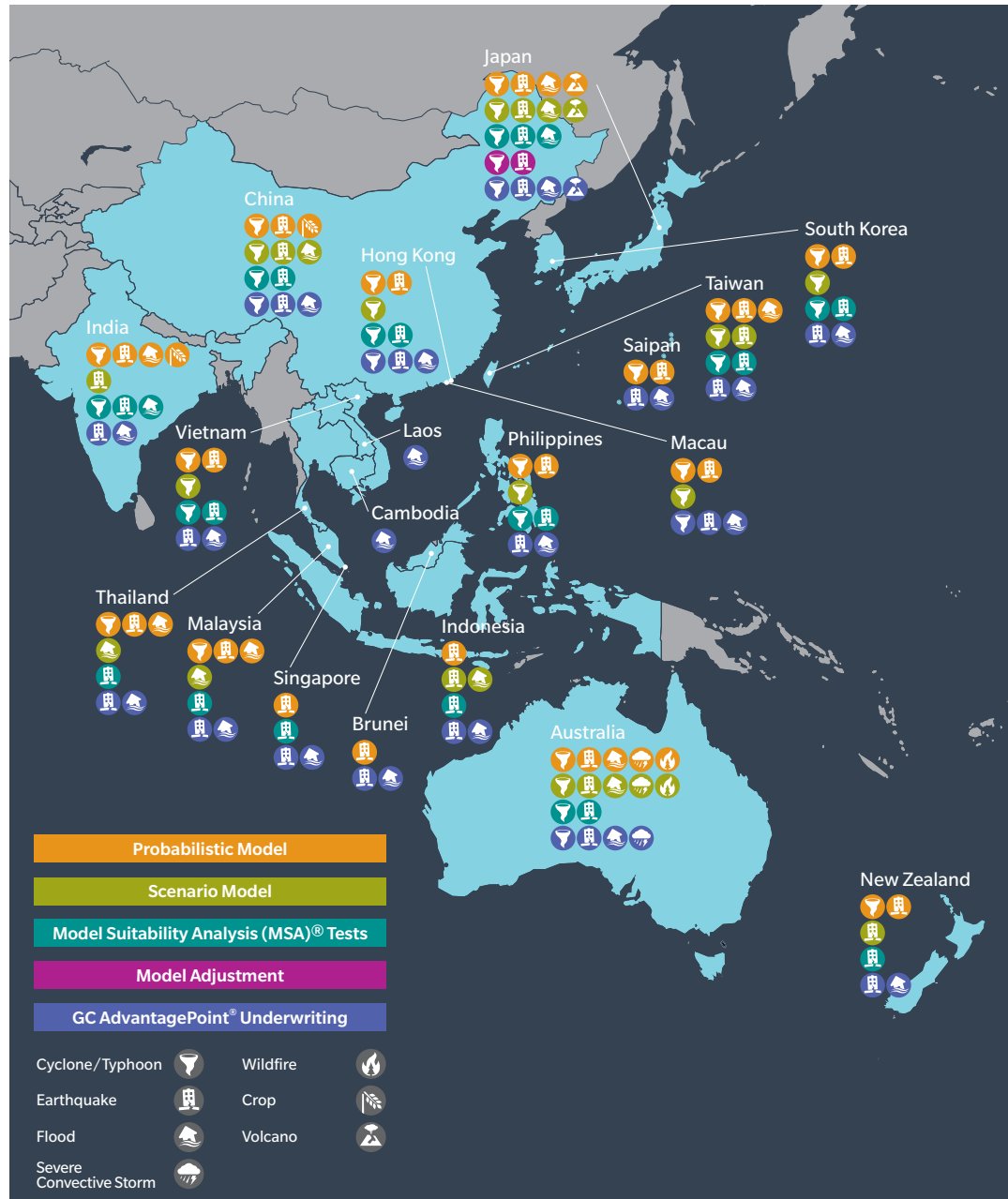
Advances in data quality coupled with expanding model development and computational power is leading to better risk assessment for (re)insurer portfolio analyses and underwriter risk analyses.

Guy Carpenter is committed to focusing resources and investment around catastrophe risk issues to support clients' ability to operate more effectively. The investment includes both upgrading existing models and developing new models. We are also embracing the new open-source Oasis loss modeling platform as a key way of delivering models transparently to our clients.

1. Model evaluation and development: Guy Carpenter works extensively with most commercial vendor models and can perform vigorous validation exercises with clients that empower them to make the most intelligent risk decisions. Where vendor models do not exist for Asia-Pacific regions we have built models for the benefit of our clients. In the process, we source a vast array of data from third-party vendors that is used to supplement commercial models by providing additional views on the hazard, vulnerability and exposure data. We also develop many scenarios for sensitivity testing.
2. GC AdvantagePoint®, our seamless platform for incorporating additional data sources, provides hazard data intersected with client exposure for the perils of wind, earthquake, flood and volcano.
3. Guy Carpenter's Model Suitability Analysis (MSA)® evaluates the performance of catastrophe models through sensitivity testing, loss validation and scientific appraisal of the model hazard component. In some cases, we develop adjustments to vendor models that are more appropriate for certain portfolios or sensitivity testing.

We are making significant advancements in data and technology to help our clients improve their understanding of flood risk. The investment includes both upgrading existing flood models and developing new models on a global scale. Our development program includes high resolution flood maps and a global event-set. The new models are being released and we will make more detailed announcements as they become available.

Guy Carpenter Asia Pacific Catastrophe Assessment Tools



Source: Guy Carpenter Analytics

Guy Carpenter is well positioned to help clients successfully grow their business in the Asia Pacific region by providing value through the entirety of the analytic value chain. With the Guy Carpenter Asia Pacific Climate Impact Centre, our collaboration with the School of Energy and Environment at the City University of Hong Kong enhances our depth of analysis of the Asia Pacific region. Our global GC Analytics®, Strategic Advisory and GC Securities* teams offer services and solutions that include industry-leading underwriting and portfolio analytics and strategic risk and capital management advisory services. We employ over 300 modeling, actuarial and advisory professionals who closely collaborate with Guy Carpenter's global broking force to deliver the best insights and growth opportunities to our clients. We encourage you to contact your Guy Carpenter representative to review and discuss your modeling, advisory and capital needs in more detail.

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Guy Carpenter & Company, Limited
26 Floor, Central Plaza,
18 Harbour Rd., Wanchai
Hong Kong

+852 2582 3500