

CAT Resource Center: Thought Leadership

HURRICANE OTIS AND ITS IMPACT ON MEXICAN REGULATORY CAT RESERVES AND REINSURANCE STRATEGY

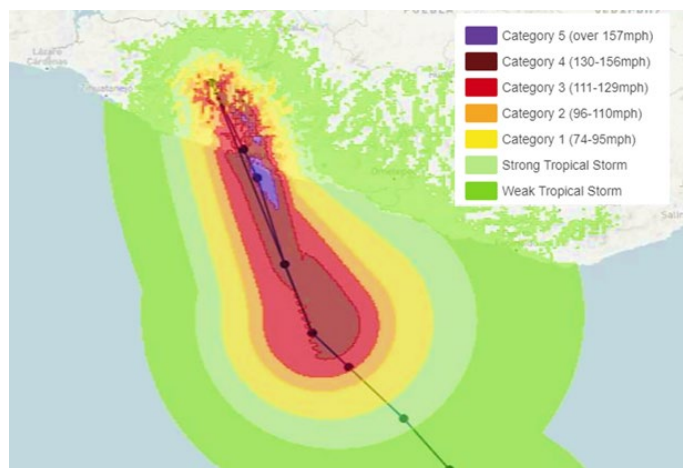
Hurricane Otis caused tremendous damage in Mexico in October 2023, quickly accelerating from a tropical storm to a category 5 hurricane. Insurers authorized to cover catastrophe risks as part of their property business must create a statutory catastrophe reserve. When an applicable catastrophic event occurs and affects an insurer's property portfolio, the statutory cat reserve can be released and used to fund claims not covered by proportional and non-proportional reinsurance. Accordingly, as the statutory cat reserve is acting like reinsurance, its depletion should be considered along with other factors when designing optimal reinsurance structures.

Recap of Hurricane Otis—from Tropical Storm to Category 5 Hurricane in less than 24 hours

Forming several hundred miles south of the Gulf of Tehuantepec, Otis was named the 15th tropical storm of the Pacific hurricane season on October 22, 2023. By noon on October 24, it had intensified to a Category 1 hurricane. From that point, it rapidly intensified by 3 p.m. to a Category 3 and by 8 p.m. to a Category 5 hurricane.

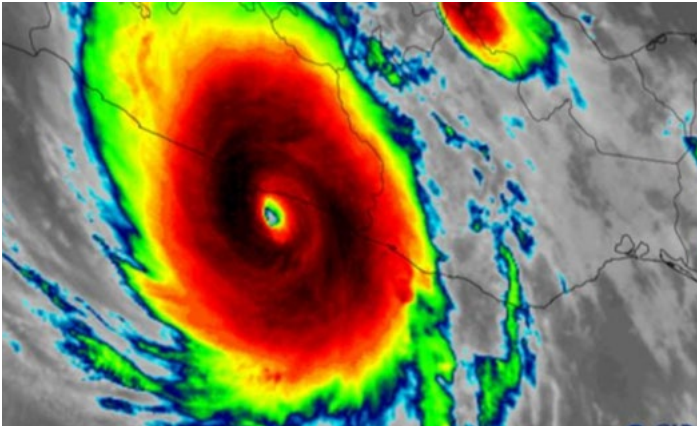
Otis made landfall in Acapulco Bay early October 25, 2023, with sustained winds above 260 km/hour, where it knocked down hundreds of power line poles, uprooted trees, caused flooding and landslides, and damaged hotel buildings, houses, vehicles, and small and large businesses located in both the Acapulco Bay and the Diamond area.

Figure 1: Estimated wind footprint.



Source: GC AdvantagePoint, Kinetic Analysis Corporation

Figure 2: Infrared satellite image of Otis on its approach to Mexico.



Source: NOAA/CIRA

Impact of Hurricane Otis on the Mexican Insurance Industry

According to the Mexican Association of Insurance Companies (AMIS) report as of January 19, 2024, 59% of claims correspond to property insurance and 41% to motor

vehicles. 97% of the reported losses correspond to property insurance damages, while only 3% corresponds to motor vehicles.

Hurricane Catastrophic Risk Reserve and other Hydrometeorological risks (Statutory Cat Reserve)

Companies authorized to insure catastrophe risks as part of their property business must create a statutory cat reserve. The statutory cat reserve is funded monthly, based on the expected catastrophe loss on a net of proportional reinsurance basis considering a return period of 1,500 years for the perils described in Appendix A.

Funding for the statutory cat reserve has a limit equivalent to 90% of the average of the last 5 years' probable maximum loss (PML), net of proportional reinsurance, coinsurance and deductibles. Under this methodology, the balance of the statutory cat reserve for the industry as of September 2023 amounted to USD 1.33 billion.

When an applicable catastrophic event occurs and affects an insurer's property portfolio, the statutory cat reserve can be released and used to fund claims not covered by

Table 1: Reported Losses from Hurricane Otis—Mexican Insurance Industry, as of Jan 19, 2024.

Occupancy	Number of Losses	%	Losses (Million USD)	%
Hotels	102	0.3%	449	21.3%
Housing	17,565	46.8%	563	26.7%
Marine	211	0.6%	53	2.5%
Other	4,214	11.2%	985	46.7%
Government	1,686	4.5%	179	8.5%
Commercial and restaurants, other	2,528	6.7%	805	38.2%
Total Property	22,092	58.9%	2,050	97.2%
Motor	15,434	41.1%	58	2.8%
Total	37,526	100.0%	2,108	100.0%

Source: AMIS report as of Jan 19, 2024/Exchange rate 17.22

proportional and non-proportional reinsurance. The release can occur automatically for reported losses derived from the occurrence of any of the perils mentioned in Appendix A.

However, with prior regulatory approval and subject to guidelines and limits, the release can also occur for other items such as:

- a. Non-payment by any other insurer or foreign reinsurer due to insolvency situations.
- b. The cost of excess of loss reinsurance coverage reinstatement, when an exhaustion is caused by the applicable catastrophe losses.
- c. To compensate for the increased cost of excess of loss reinsurance coverage, when according to the point of view of regulators, there is a generalized hard market international reinsurance in the fiscal year in question.

Potential Reinsurance Planning Impact from a Lower Statutory Cat Reserve

An insurer may consider exposing a portion of the statutory cat reserve in the design of its catastrophic excess of loss reinsurance program. However, the unexposed part of the statutory cat reserve cannot be less than the estimated cost of the reinstatement of non-proportional reinsurance contracts. Thus, as insured losses caused by Otis may result in a reduction in the statutory cat reserve for an insurance company, the net financial protection in place for catastrophic losses will also be impacted.

Due to its flexible nature, the statutory cat reserve provides protection for both loss frequency and severity protection. In that sense, it acts more like a proportional contract than an excess of loss contract. As such, the

decrease in a statutory cat reserve may make proportional reinsurance more attractive to cover the coverage gap left by a smaller statutory cat reserve.

In summary, the decrease in cat reserve balances should be considered alongside catastrophic modeling results, underwriting strategies, reinsurance pricing, and the impact on key performance indicators when designing optimal reinsurance structures and strategies.

How Guy Carpenter Can Help

Guy Carpenter would be pleased to support you in this evaluation process, by analyzing the impact on catastrophe reserves and the way to use them in your next catastrophe renewals for upcoming seasons.

References

Mexican Association of Insurance Institutions (AMIS). Otis Market Report, as of December 8, 2023. <https://sitio.amis.com.mx/>

National Meteorological Service. Otis satellite images, October 22-25, 2023. <https://smn.conagua.gob.mx/es/>

National Insurance and Bonding Commission (CNSF). Single Insurance and Bonding Circular. www.cnsf.gob.mx

Guy Carpenter CAT Resource Center, Post Event—Hurricane Otis. Nov. 1, 2023. <https://www.guycarp.com/insights/2023/11/post-event-hurricane-otis.html>

Appendix A: Perils considered within the category of hurricane and other climate risks

Regulation in Mexico through that country's insurance and surety law establishes that "hurricane and other climate risks" are understood to be the occurrence of each of the following events:

- a) **Mud avalanches:** Mudslide caused by floods or rains.
- b) **Hail:** Atmospheric precipitation of water that falls strongly in the form of hard, compact ice crystals.
- c) **Frost:** Climatic phenomenon consisting of the unexpected drop in ambient temperature to levels equal to or lower than the freezing point of water in the place of occurrence.
- d) **Hurricane:** Flow of water and air of great magnitude, moving in a circular path around a low-pressure center, on the sea or land surface with peripheral speed of direct impact winds equal to or greater than 118 kilometers per hour, having been identified as such by the National Weather Service.
- e) **Flood:** The temporary accidental covering of soil by water as a result of deviation, overflow or breakage of the retaining walls of rivers, canals, lakes, dams, ponds and other reservoirs or water currents, natural or artificial.
- f) **Rain flooding:** The temporary accidental coverage of soil by rainwater as a result of the unusual and rapid accumulation or displacement of water caused by extraordinary rainfall that reaches at least 85% of the average maximum of the area of occurrence in the last 10 years, eliminating the maximum and minimum observed, measured at the nearest meteorological station.
- g) **Swell:** Alteration of the sea that manifests itself with an over-rise of its level due to a depression or meteorological disturbance that combines a decrease in atmospheric pressure and a shear force on the sea surface produced by the winds.
- h) **Sea shock or tsunami:** The violent agitation of the sea waters as a result of a shaking of the bottom that raises its level and spreads to the coasts, giving rise to floods.
- i) **Snowfall:** Precipitation of ice crystals in the form of flakes.
- j) **Stormy winds:** Winds that reach at least the category of tropical depression, tornado or grade 8 according to the Beaufort scale (62 kilometers per hour), according to the National Meteorological Service or records recognized by it.
- k) **Any other peril** that is part of the risks covered in hurricane insurance.

About Guy Carpenter

Guy Carpenter & Company, LLC is a leading global risk and reinsurance specialist with 3,500 professionals in over 60 offices around the world. Guy Carpenter delivers a powerful combination of broking expertise, trusted strategic advisory services and industry-leading analytics to help clients adapt to emerging opportunities and achieve profitable growth. Guy Carpenter is a business of Marsh McLennan (NYSE: MMC), the world's leading professional services firm in the areas of risk, strategy and people. The company's more than 85,000 colleagues advise clients in over 130 countries. With annual revenue of \$23 billion, Marsh McLennan helps clients navigate an increasingly dynamic and complex environment through four market-leading businesses including Marsh, Mercer and Oliver Wyman. For more information, visit www.guycarp.com and follow us on LinkedIn and X.

GC Analytics® Disclaimer(s)

The data and analysis provided by Guy Carpenter herein or in connection herewith are provided "as is", without warranty of any kind whether express or implied. The analysis is based upon data provided by the company or obtained from external sources, the accuracy of which has not been independently verified by Guy Carpenter.

Neither Guy Carpenter, its affiliates nor their officers, directors, agents, modelers, or subcontractors (collectively, "providers") guarantee or warrant the correctness, completeness, correctness, merchantability, or fitness for a particular purpose of such data and analysis. The data for a particular purpose of such data and analysis. The data and analysis is intended to be used solely for the purpose of the company internal evaluation and the company shall not disclose the analysis to any third party, except its reinsurers, auditors, rating agencies and regulators, without Guy Carpenter's prior written consent.

In the event that the company discloses the data and analysis or any portion thereof, to any permissible third party, the company shall adopt the data and analysis as its own. In no event will any provider be liable for loss of profits or any other indirect, special, incidental and/or consequential damage of any kind howsoever incurred or designated, arising from any use of the data and analysis provided herein or in connection herewith.

Statements or analysis concerning or incorporating tax, accounting or legal matters should be understood to be general observations or applications based solely on our experience as reinsurance brokers and risk consultants and may not be relied upon as tax, accounting or legal advice, which we are not authorized to provide. All such matters should be reviewed with the client's own qualified advisors in these areas.

Guy Carpenter & Company, LLC provides this report for general information only. The information contained herein is based on sources we believe reliable, but we do not guarantee its accuracy, and it should be understood to be general insurance/reinsurance information only. Guy Carpenter & Company, LLC makes no representations or warranties, express or implied. The information is not intended to be taken as advice with respect to any individual situation and cannot be relied upon as such. Statements concerning tax, accounting, legal or regulatory matters should be understood to be general observations based solely on our experience as reinsurance brokers and risk consultants, and may not be relied upon as tax, accounting, legal or regulatory advice, which we are not authorized to provide. All such matters should be reviewed with your own qualified advisors in these areas.

Readers are cautioned not to place undue reliance on any historical, current or forward-looking statements. Guy Carpenter & Company, LLC undertakes no obligation to update or revise publicly any historical, current or forward-looking statements, whether as a result of new information, research, future events or otherwise. The trademarks and service marks contained herein are the property of their respective owners.

©2024 Guy Carpenter & Company, LLC. All rights reserved.