

GC LiveCat™ Hurricane Index

Guy Carpenter has created a Hurricane Index to assess the potential loss from hurricanes making landfall in the Atlantic Basin by defined regions: Northeast, Southeast, Florida and Gulf. Guy Carpenter created this Index in response to the insurance and reinsurance industry questioning the credibility of the catastrophe models after the 2004 and 2005 hurricane seasons and insurers and reinsurers requirement to better understand and manage their cat risk. Unlike most indices which do not differentiate by geographic location and only take into account frequency or severity and historical climatologic information, the Guy Carpenter Hurricane Index not only takes into account all of the aforementioned information, but also takes into account current meteorological information and forecasts about live events, the forecast landfall location and the forecast landfall probability and the conditional severity.

These indices can be used to purchase reinsurance prior to the inception of a Named Event or during a Named Event.

Selection of coverage prior to the inception of a named storm using the indices is predicated upon the GC ForeCat™ Indexed Industry Occurrence Exceedance Probability Curve, which is based on a seasonal view of regional landfall propensities. For each of the aforementioned regions, the GC ForeCat Indexed Industry Occurrence Exceedance Probability Curve is defined as:

ForeCat Adjusted Reference Vendor Model Industry OEP/Reference Vendor Model Expected Loss given a storm

The above provide a view of how the shape of the OEP curve is altered when reflecting seasonal information vs. just incorporating historical climatologic information or a near term average view.

The following is an illustration of how the GC LiveCat Hurricane Index would respond to a reinsurance purchase made prior to the inception of a named event.

The following represents the GC ForeCat OEP curve and GC ForeCat Indexed Industry OEP curve for the Gulf for 2008.

Gulf Indexed OEP

			May-08
		GC ForeCat	1.35
Return Period	Exceedance Probability	Vendor Model Indexed OEP	GC ForCat Indexed OEP
5	20.00%	0.89	1.67
10	10.00%	2.23	3.26
15	6.67%	3.26	4.45
20	5.00%	4.07	5.44
25	4.00%	4.76	6.22
30	3.33%	5.32	6.96
35	2.86%	5.95	7.60
40	2.50%	6.36	8.31
45	2.22%	6.80	8.69
50	2.00%	7.27	9.29
55	1.82%	7.78	9.72
60	1.67%	8.13	10.16
65	1.54%	8.50	10.62
70	1.43%	8.69	10.86
75	1.33%	9.09	11.36
100	1.00%	10.39	12.98
150	0.67%	12.70	15.18
200	0.50%	14.20	17.35
250	0.40%	15.87	18.97
500	0.20%	20.74	24.78

Vendor Model OEP \$B	GC ForeCat OEP \$B
2.65	4.94
6.61	9.65
9.65	13.18
12.06	16.11
14.10	18.42
15.76	20.59
17.62	22.51
18.83	24.61
20.14	25.73
21.53	27.51
23.02	28.76
24.07	30.08
25.16	31.45
25.73	32.16
26.90	33.62
30.75	38.43
37.59	44.92
42.02	51.35
46.97	56.14
61.38	73.36

Expected Severity **2.96 Billion**

The GC ForeCat rate for the Gulf in 2008 was 1.35. As the climatologic rate for the Gulf was 0.66, this implies that GC ForeCat was predicting twice the storm activity as that implied by the historical average. The above chart illustrates that GC ForeCat predicted a more events making landfall in the Gulf therefore yielding a higher OEP curve than the vendor model. Thus, an insurer may want to purchase additional frequency and/or vertical protection in the Gulf . This can be done on a UNL or a parametric basis for the entire Gulf region or specified gates within the region.

On a parametric basis, for example, after reviewing the 2008 Gulf GC ForeCat OEP relative to the vendor model OEP, an insurer may be concerned about the seasonal 1 in 100 year loss of \$38 billion compared to the near term view of \$31 billion. A cover satisfying this concern would attach at an index value of 10.5. Coverage could be pro rata – i.e. based on a window (exhaustion point), or binary. Thus if protection up to a 1 in 200 year loss event is sought, the exhaustion index value would be 14.20. Coverage is triggered upon a Named Event yielding an index value exceeding 10.5.

Index values are updated when there is a Named Event in the Atlantic Basin. There is a separate GC LiveCat Hurricane Index for each region and GC LiveCat Hurricane Index is updated every twelve hours. Regions where there is no landfall the Index Value remains at 1.0.

We define the updated Index Value, GC LiveCat Hurricane Index, as:

The conditional expected loss given the forecast of named event/the near term vendor model expected loss given a storm.

Thus, if an insurer purchased the aforementioned coverage for Hurricane Ike in 2008, there would be no payment made as the landfall Index Value equaled 2.27 as seen below. As Ike was approximately a 1 in 17 year return storm on the vendor model distribution, for a cover to have a payoff it would have had to attach at a value less than 2.27.

Hurricane IKE GC LiveCat Forecasted Industry Expected Loss in US Gulf

Forecast Date	Forecast Time	E[L]	Index
09/06/08	0	2.96	0.01
09/06/08	12		0.17
09/07/08	12		0.17
09/08/08	0		0.26
09/08/08	12		0.27
09/09/08	0		0.28
09/09/08	12		0.42
09/10/08	0		0.76
09/10/08	12		1.29
09/11/08	0		2.61
09/11/08	12		2.51
09/12/08	0		2.06
09/12/08	12		2.28
09/13/08	0		2.34
09/13/08	12		2.08
Weighted average landfalling value			2.27

Note: Landfall made between last two forecasts at 2:10am on September 13th, 2008

Coverage also could be purchased on a “live” basis, when a storm is present in the Atlantic Hurricane basin. As stated above we define the GC LiveCat Hurricane Index as:

The conditional expected loss given the forecast of named event/the near term vendor model expected loss given a storm.

Prior to the inception of a live storm, the initial value is always equal to 1.0. Guy Carpenter will be publishing GC LiveCat Index as well as its Distribution in order for parties to be able to determine the structure. Similar to the pre-season product, determination of whether a payment is made is predicated upon the GC LiveCat Index Value at landfall. Index values and distributions within 36 hours of landfall will only be distributed to licensed/transacting parties.

The following represents the GC LiveCat Index for the Gulf at the following forecast times for Hurricane Ike:

Forecast Date/Time	9/6/2008:00	9/6/2008:12	9/7/2008:12	9/8/2008:00	9/8/2008:12
Index Value	0.01	0.17	0.17	0.26	0.27
Distribution					
50th	-	-	-	0.01	0.01
75th	-	0.00	-	0.14	0.18
90th	-	0.35	0.10	0.58	0.61
99th	0.03	3.14	3.97	3.91	3.03

Forecast Date/Time	9/9/2008:00	9/9/2008:12	9/10/2008:00	9/10/2008:12	9/11/2008:00
Index Value	0.28	0.42	0.76	1.29	2.61
Distribution					
50th	-	0.02	0.22	0.39	1.39
75th	0.13	0.35	0.85	1.53	3.47
90th	0.70	1.16	2.17	3.74	6.65
99th	3.98	5.17	6.45	10.32	15.48

Forecast Date/Time	9/11/2008:12	9/12/2008:00	9/12/2008:12	9/13/2008:00	9/13/2008:12
Index Value	2.51	2.06	2.28	2.34	2.08
Distribution					
50th	1.62	1.19	1.33	1.59	1.15
75th	3.43	2.78	3.11	3.21	2.77
90th	5.93	5.09	5.60	5.36	5.20
99th	12.44	11.21	12.21	11.00	11.55

For example, on September 9th, an insured may decide to purchase coverage with a coverage attachment point of 1.5 and exhaust at a value of 3.0. Given the GC LiveCat Landfall Index was equal to 2.27, the cover would have been triggered.

Loss Settlement can be paid in two different ways: modeled loss vs selected limit on a prorata basis or binary basis.

For example if the insured wants to purchase \$100M of coverage on a binary basis, the payment is \$100M. If purchased on a prorata basis, the loss payment is $(2.27-1.5)/(3-1.5)*\$100M$ or \$51.3M.

GC also calculates modeled loss estimates every twelve hours during the storm using the WSI LiveCat Forecast and a defined portfolio. For Ike, at landfall, Guy Carpenter calculated an industry modeled loss estimate for the Gulf Region of \$6.73B. For a modeled loss cover, the contract will have a stated dollar attachment point and limit. Thus, if the attachment point is \$6B and the limit is \$100M, then the loss settlement is \$100M. Given that the GC modeled loss estimate does not include estimates for flood a factor can be included in the contract to adjust for this.

Thus, the GC Hurricane LiveCat Index provides parties the ability to purchase livecat coverage up to 5 days before the NHC forecast and unlike the PCS index provides parties with information about the Event vs just a severity value based upon historical information and post event industry provided loss statistics. GC ForeCat and GC LiveCat provide more information to allow insurers and reinsurers to buy backup coverage if required, more enhanced, optimal and efficient coverage as coverage can be defined on a county, gate(s) or regional basis and for defined intensity storm. For more information on these customized solutions, please refer to the Contact List.

Forecat Indexed OEP Curve by Region for 2009

2009 GC ForeCat Indexed OEP Curves							
Northeast				Southeast			
			May-09				May-09
GC ForeCat			0.21	GC ForeCat			0.36
Return Period	Exceedance Probability	Vendor Model Indexed OEP	GC ForeCat Indexed OEP	Return Period	Exceedance Probability	Vendor Model Indexed OEP	GC ForeCat Indexed OEP
5	20.00%	0.00	0.00	5	20.00%	0.07	0.08
10	10.00%	0.05	0.01	10	10.00%	0.66	0.67
15	6.67%	0.22	0.11	15	6.67%	1.11	1.13
20	5.00%	0.47	0.27	20	5.00%	1.52	1.52
25	4.00%	0.79	0.49	25	4.00%	1.88	1.88
30	3.33%	1.13	0.73	30	3.33%	2.21	2.21
35	2.86%	1.47	1.01	35	2.86%	2.51	2.56
40	2.50%	1.85	1.29	40	2.50%	2.87	2.87
45	2.22%	2.24	1.59	45	2.22%	3.16	3.16
50	2.00%	2.65	1.89	50	2.00%	3.48	3.48
55	1.82%	3.02	2.19	55	1.82%	3.78	3.78
60	1.67%	3.45	2.50	60	1.67%	4.10	4.10
65	1.54%	3.87	2.80	65	1.54%	4.38	4.38
70	1.43%	4.25	3.14	70	1.43%	4.67	4.67
75	1.33%	4.59	3.45	75	1.33%	4.91	4.99
100	1.00%	6.44	5.04	100	1.00%	6.27	6.27
150	0.67%	9.77	7.94	150	0.67%	8.41	8.55
200	0.50%	12.49	10.34	200	0.50%	10.39	10.56
250	0.40%	14.81	12.49	250	0.40%	12.24	12.44
500	0.20%	22.45	20.05	500	0.20%	19.96	20.29

Forecat Indexed OEP Curve by Region for 2009 (continued)

Florida				Gulf			
			May-09				May-09
GC ForeCat			0.29	GC ForeCat			0.65
Return Period	Exceedance Probability	Vendor Model Indexed OEP	GC ForeCat Indexed OEP	Return Period	Exceedance Probability	Vendor Model Indexed OEP	GC ForeCat Indexed OEP
5	20.00%	0.94	0.00	5	20.00%	0.89	0.52
10	10.00%	2.95	0.04	10	10.00%	2.23	1.71
15	6.67%	4.51	0.49	15	6.67%	3.26	2.55
20	5.00%	5.78	1.06	20	5.00%	4.07	3.26
25	4.00%	6.99	1.59	25	4.00%	4.76	3.90
30	3.33%	7.98	2.07	30	3.33%	5.32	4.45
35	2.86%	8.97	2.55	35	2.86%	5.95	4.87
40	2.50%	9.79	2.95	40	2.50%	6.36	5.32
45	2.22%	10.69	3.36	45	2.22%	6.80	5.82
50	2.00%	11.50	3.73	50	2.00%	7.27	6.22
55	1.82%	12.38	4.13	55	1.82%	7.78	6.51
60	1.67%	13.12	4.44	60	1.67%	8.13	6.96
65	1.54%	13.91	4.78	65	1.54%	8.50	7.27
70	1.43%	14.54	5.14	70	1.43%	8.69	7.60
75	1.33%	15.19	5.45	75	1.33%	9.09	7.78
100	1.00%	18.38	6.89	100	1.00%	10.39	9.09
150	0.67%	23.23	9.23	150	0.67%	12.70	11.11
200	0.50%	27.28	11.33	200	0.50%	14.20	12.70
250	0.40%	30.23	13.12	250	0.40%	15.87	13.88
500	0.20%	39.34	20.66	500	0.20%	20.74	18.55

Guy Carpenter & Company, LLC is the world's leading risk and reinsurance specialist and a part of the Marsh & McLennan Companies. With 50 offices worldwide, Guy Carpenter creates and executes reinsurance solutions and delivers capital market solutions* for clients across the globe. The firm's full breadth of services includes line of business expertise in Agriculture; Aviation; Casualty Clash; Construction and Engineering; Excess and Umbrella; Life, Accident and Health; Marine; Medical; Political Risk and Trade Credit; Professional Liability; Property; Retrocessional Reinsurance; Surety; Terrorism and Workers Compensation. GCFac[®] is Guy Carpenter's dedicated global facultative reinsurance unit that provides placement strategies, timely market access and centralized management of facultative reinsurance solutions. In addition, Guy Carpenter's InStrat[®] unit utilizes industry-leading quantitative skills and modeling tools that optimize the reinsurance decision-making process and help make the firm's clients more successful. Guy Carpenter's website address is www.guycarp.com.

*Securities or investments, as applicable, are offered in the United States through GC Securities, which is a division of MMC Securities Corp., a US registered broker-dealer and member FINRA/SIPC. Main Office: 1166 Avenue of the Americas, New York, NY 10036. Phone: (212) 345-5000. Advice on securities or investments in the European Union is provided through GC Securities Ltd., authorized and regulated in the UK by the Financial Services Authority. Reinsurance products are placed through qualified affiliates of Guy Carpenter & Company, LLC, MMC Securities Corp., GC Securities Ltd. and Guy Carpenter & Company, LLC are affiliates owned by Marsh & McLennan Companies. This communication is not intended as an offer to sell or a solicitation of any offer to buy any security, financial instrument, reinsurance or insurance product.

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.

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.