Geography Only Part of Limiting Hurricane Risk

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Looks as if we'll make it through this hurricane season without a major CAT event. Nevertheless, climatologists already are warning the insurance industry that global warming will continue to exacerbate both the frequency and severity of hurricane-related losses in years to come.

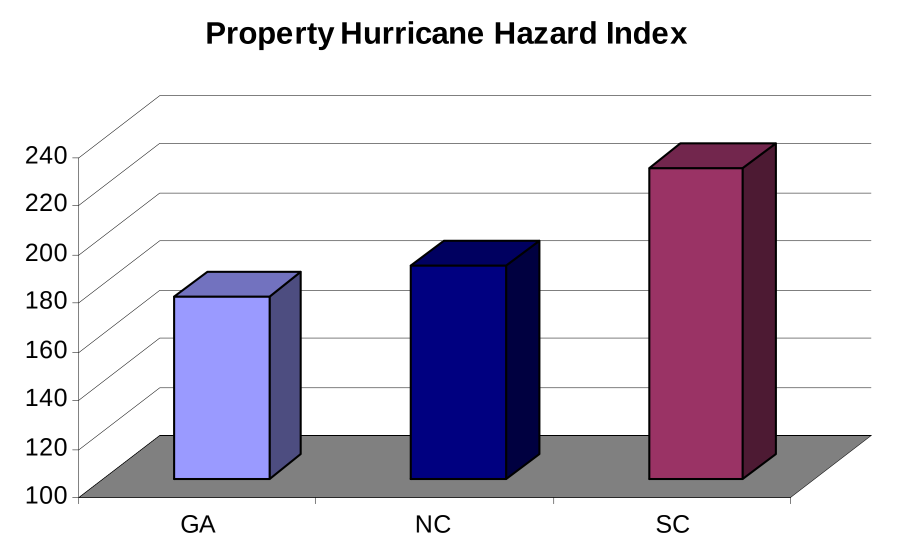
Rather than sitting back and worrying about what next year will bring, carriers would be well advised to use this interlude to review the management of their exposure to CAT risks in general, and hurricane risks in particular. In so doing, we would urge carriers to keep in mind one key point: **Geography is only part of the story in limiting hurricane-related risk**, albeit a very visible part.

In the June article of this MarketStance series,we developed state-level estimates of the relative risk posed by hurricanes for each state's commercial lines book of business. The surprising finding of that article was that South Carolina had significantly higher hurricane risk in its entire commercial lines book that did either its southern or northern coastal neighbors – Georgia and North Carolina, respectively. Indeed, the hurricane risk index for South Carolina was more than 30% higher than for Georgia.

A quick glance at the major cities in the following map tells why the neighboring states' respective hurricane risks are significantly below that of South Carolina. Simply put, **much of the major population centers for Georgia and North Carolina are located well inland, while in South Carolina it is far more concentrated along the coast.**

Take a second look at this map. It shows recent employment growth, a good proxy for economic growth, at the county level over the 2001-04 period. It's easy to see that much of the recent economic growth in each state has occurred in coastal areas, and even more so in South Carolina. This concen-tration of growth in coastal counties underscores the fact that **much otherwise attractive commercial lines business is located in coastal areas — the very areas in which many commercial lines insurers**

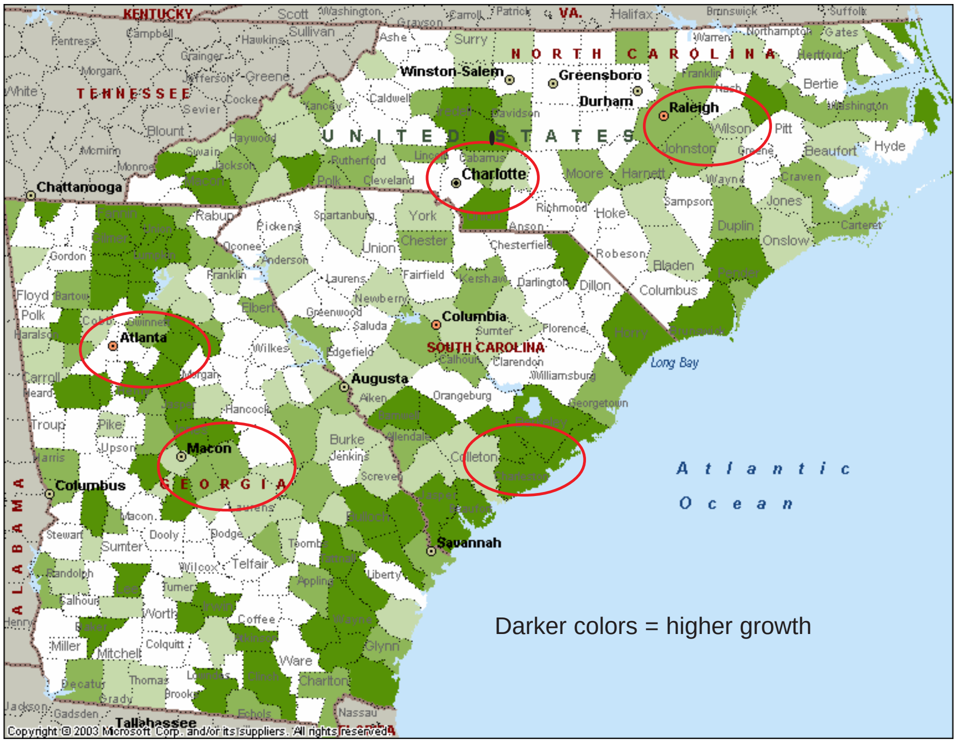
Chart 1



Commercial lines in South Carolina carry a significantly higher hurricane risk than either Georgia or North Carolina, reflecting higher shares of commercial property situated in coastal counties.

Map 1

Recent Employment Growth by County



Much of the major population centers for Georgia and North Carolina are located well inland, lowering the overall hurricane risk factor in those states. However, much of the recent economic growth in all three states has occurred in coastal areas.

currently are doing their best to avoid writing.

Think about this another way. As so many commercial lines insurers rushed to avoid coastal area risks over the past few years, they inadvertently increased competitive pressures in the non-coastal areas they remained willing to write in. And now, as rates are softening, **this disproportionate focus on non-coastal areas will exacerbate the expected deterioration on underwriting results**.

In areas such as South Carolina, reducing hurricane risk without abandoning otherwise attractive risks may appear to be an impossibility for insurers — until an account-wide, class of business perspective is put on an equal footing with geographic risk analysis. Put simply, **some classes of business have so little property exposure relative to the entire account's premium that it is possible to write the account profitably in all but the highest hurricane risk areas**.

The following chart illustrates this concept for the 100 most important business classes in South Carolina – everything from marine cargo handling (425 and 43%) to turbine manufacturing (112 and 51%).

The first factor in parentheses is the hurricane exposure index for this particular class of business in South Carolina. This index reflects the degree of hurricane risk at each particular location in which these businesses operate, weighted by the amount of property exposure at this location. Easy to see why marine cargo handling with an index of 425 might come out as the highest, isn't it? For reference, the aggregate index for all classes of business in South Carolina is 225.

The second value associated with each class is the share of property to the total core lines premium generated by this class of business. For turbine manufacturing, not surprisingly, MarketStance estimates that some 51% of the account-wide premium potential arises from property exposures. While this is a relatively high share, the class remains attractive to write due to its very low hurricane exposure index of 112 – just about half the average for all classes of business in South Carolina.

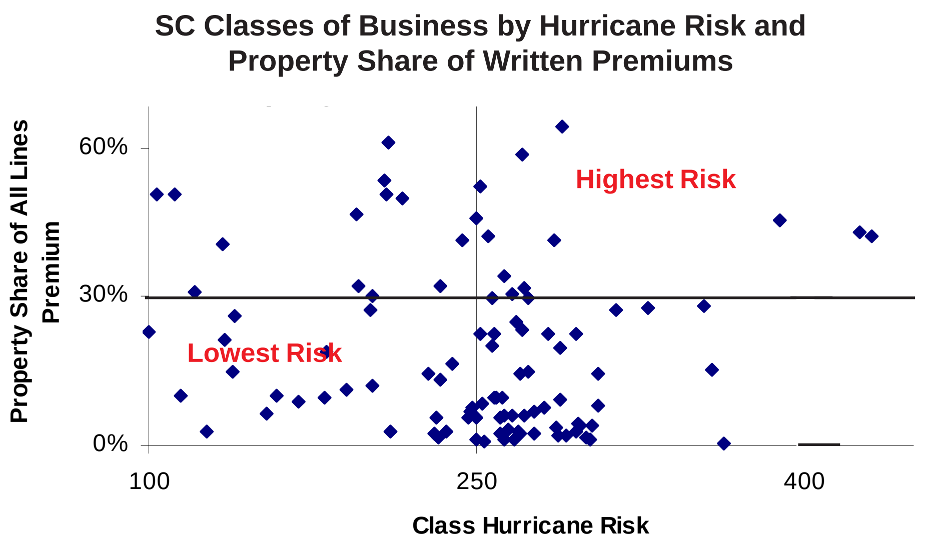
To understand the significance of Chart 2, think for a moment about two classes with very high hurricane risk indexes: lawyers' offices (302 and 4%) and hospital and medical services offices (313 and 27%). Both have quite elevated hurricane indexes, but lawyers' offices have a very low property premium as a share of all core lines premium. As a result, this class is likely to be attractive to write everywhere in South Carolina if we have a reasonable likelihood of rounding out the account to include all lines of coverage. In contrast, the medical services class has sufficiently high property exposures that it would only be attractive to write in non-coastal areas.

Can you see a logic pattern emerging here? It's a surprisingly simple but effective way to separate classes into three or four groups:

- Classes safe to write anywhere in the state – low property exposure <u>and</u> a low hurricane risk index.
- Classes safe to write anywhere in the state <u>only if</u> the accounts are rounded out – low property exposure and middling to higher hurricane risk.
- Classes safe to write only in low risk parts of the state – higher property exposure and moderate hurricane risk.
- Classes best not written at all – high hurricane risk index.

To illustrate this approach, we excluded two groups of accounts from South Carolina's state-wide aggregate book of business. The first group is five sizable classes with very high hurricane risk scores. The second group is five

Chart 2



Classes with low property exposure and a low hurricane risk index (lower left quadrant) are safe to write even when in coastal counties. Classes that are safe to write only in inland/low risk part of the state are those with higher property exposures but lesser hurricane risk (upper left quadrant). Classes in the right hand quadrants are best avoided, or written only if the accounts are rounded with additional lines.

sizable classes with moderate hurricane risk scores but high property exposure concentrations. This restriction in underwriting appetite reduced the property hurricane exposure index by almost 10 percent, while reducing the in-appetite premium potential by only 5 percent — a two-to-one impact. In contrast, conventional approaches that unilaterally exclude high risk coastal areas are likely to have just the inverse of this impact ratio — that is, available premium potential must be reduced by more than two percentage points for each point of reduction in hurricane hazard index.

Irrespective of the type of CAT at issue, the objective of carriers should be to reduce the associated risk while maintaining as large as possible a pool of premium potential from which to select. Starting the process by excluding the most CAT-prone areas arguably is the least efficient approach. As we've demonstrated, putting class of business considerations before purely geographic ones a can make the best of very difficult situation for carriers, agents and insureds.

Originally published in the October 30, 2006, National Underwriter.

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