

## Perspectives: Why Model Behavior Doesn't Always Make Sense

By Meg Green, senior associate editor, BestWeek:

OLDWICK, N.J. August 10 (BestWire) — It might come as a shock to hear Karen Clark, who created the first catastrophe model in the 1980s, caution insurers against relying on cat models too much.

Even billionaire Warren Buffett has said: “Beware of geeks bearing formulas,” and cautioned investors against relying too heavily on models.

After all, models of all kinds are often wrong. Remember how the insurance industry — not to mention the rest of the world — was surprised at the losses of Hurricane Andrew? Surprised at the cost of the Sept. 11, 2001, terrorist attacks? Surprised to see the mortgage-backed securities market come tumbling down last year?

When the mother of catastrophe modeling and the father of brilliant investing both agree that relying too much on models is a mistake, maybe it's time to pull the plug on computers and models, and find a nice community of Luddites to join.

Not so fast. Perhaps the models aren't to blame.

As early IBM programmers used to say: “Garbage in, garbage out.” If you give the machines bad data, they will give you bad data back. Models run on assumptions, and assumptions can be wrong.

As Buffett said, speaking about the historic models of municipal bonds: “Constructed by a nerdy-sounding priesthood using esoteric terms such as beta, gamma, sigma and the like, these models tend to look impressive. Too often, though, investors forget to examine the assumptions behind the symbols.”

Insurers are known for having legions of mathematical wizards who can slice and dice numbers like a Food Network chef chopping carrots.

More importantly, like tea leaf readers, these wizards can see the future in those numbers. They can see loss trends forming. They can see the need to raise rates or change terms and conditions. They can read the market like a surfer reads the waves, and know when to go deep and when to stay in the shallows.

But looking into those numbers they cannot see what is not there. As former Defense Secretary Donald Rumsfeld famously said, “There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know that we don't know.”

So that's half the problem right there. A model can't spit out a 100% accurate answer if the assumptions it's based on aren't accurate. And predicting hurricanes and earthquakes is a tricky business, a Vegas bet with long odds on a good day.

The other half of the problem is what to do with the answers you do get from the models.

Clark has warned that insurers too often hang their hat on something called “probable maximum loss,” — the maximum loss an insurer expects from any catastrophic event. Insurers will often make major business decisions — should I write another policy in this region? — based in part on an expected PML.

But such a specific number does not exist, Clark said. She encourages insurers to instead rely on a range of possible losses. Which, while it's not as tidy as a single number, it's a more realistic estimate, one that will not change from day to day.

People often think of the insurance industry as one of cold, hard numbers. The industry does rely a lot on numbers, but gets little credit for the creativity, the imagination and the vision necessary to process those numbers.

To squeeze one more quote in, it was Albert Einstein who said, “Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand.”

Let's hope insurers remember it can be as important to imagine and dream as it is to add and subtract.