SOCIETY OF ACTUARIES

Article from:

# The Actuary Magazine

June/July 2010 – Volume 7 Issue 3

Letter to the Editor

# A LETTER AND A CONVERSATION

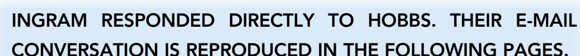
In "The Many Stages of Risk" (Dec. 2009/Jan. 2010 issue of *The Actuary*), Dave Ingram decries a commonplace two-stage view of risk by which there is a "normal" stage and a "dreadful" stage, separated by a cliff—a point at which means and standard deviations change suddenly, seemingly with no continuity. He proposes to replace this with a "cyclical" view, in which the financial system goes through cycles that are continuous, like a sine wave. He describes four stages of the price cycle, involving (1) stable prices, (2) rapidly rising prices, (3) peak prices, and (4) rapidly falling prices, using the Case-Shiller Home Price Index as an illustration.

I think the idea that prices and risk go through cycles is reasonable. The problem with his presentation is that he describes the phase during which prices rise rapidly as the "low risk" phase, and the phase in which prices reach a peak as the "high risk" phase, where nothing separates these two phases but an inflection point which, in practice, can only be detected after the fact—"after it is too late." Consequently, his analysis presents risk as if it goes off a cliff suddenly and with no continuity, as prices transition from concave upward to concave downward, rather than changing in a continuous cycle the way that prices do.

I think he is mistaken in calling the phase during which prices rise rapidly the "low risk" phase. If prices used to be stable but now are rising rapidly, then their realized (historical) standard deviation is also rising. Assuming no change in surplus for the owner or insurer of these assets, the increase in standard deviation results in an increased probability of ruin, making this an environment of increasing risk, not low risk.

It is true but irrelevant that, during this phase, those who take the most risks also reap the most rewards. Risk is the flip side of opportunity, so higher risks go hand in hand with greater opportunities for reward. Increasing rewards are merely symptomatic of increasing risk, not an indication that risks are low. The real "low risk" environment is the one in which prices are stable.

Yours truly,
**Jesse Hobbs, FSA, American General Life & Accident**



**THE INGRAM/HOBBS E-MAIL CONVERSATION**

**Dear Jesse,**

Thanks very much for your comments.

Perhaps the difference in our characterizations is the assumed holding period.

My discussion relates to risk taking during the period that expires during that period. I did not say that and I realize now that I should have.

I think that your interpretation might presume a longer, multiperiod holding of the risk.

So in the example of the home real estate market, during the low risk (0) stage, no investments make losses.

We all saw that.

It does contradict the maxim that says that high reward MUST go with high risk.

You see, my point is that there is no one out there enforcing that maxim. So if you insist on following it, even when it is a Stage 0 market, you will miss the high-profit, low-risk opportunities.

Risk is the highest when everything that you do makes a loss. If you use a Stage 1 risk model during that period, you will keep taking bad risks because you will underestimate them.

Another point that perhaps I did not make clear is that you MUST be careful to re-evaluate your positions when the Stage changes. Otherwise the “low” risk investments will prove themselves to be “high” risk just as you suggest.

Your comments are extremely helpful. The concepts that I am trying to tell about are still being developed and so there is a good chance I have said something wrong. This is my fast answer. (From my BlackBerry on the train home on a Friday night.) I will reread your comments more slowly and respond further if anything additional comes to mind, including a reversal of my opinions.

Regards,

**Dave Ingram, FSA, CERA, MAAA, Willis Re**

**Dave,**

I had thought of saying something about the time horizon, and I think this is what you're getting at by mentioning the holding period. It certainly is worth considering.

As long as you think you're in a low-risk environment and every risk you take is making money, you are going to continue to hold your position, aren't you? If you sell one position, or if it matures, then you'll use your capital to take another one, since you believe that every risk you take will be rewarded. You will only stop doing this once you realize that risks aren't low anymore.

You did not disagree with my characterization of your transition from "low risk" to "high risk" environment as taking place at a point of inflection. But of course, your graph showed 30 points of inflection in the "stable price" environment that meant nothing, and one point of inflection in the "rapidly rising price" environment that also meant nothing. How long after the point of inflection that means **something** will you realize that you are now in a "high-risk" environment? How much can things change before you realize that this change is for real?

While you're riding home on the train, you might think of the visible horizon as how much track ahead the engineer can see, and the risk horizon as how much track ahead the train needs in order to stop, assuming the engineer slams on the brakes right now. I think you'll realize that the risk horizon often exceeds the visible horizon, and that's why train wrecks occur. The recent turmoil in the financial markets was certainly a train wreck. It happened because people believed they could see further ahead than their risk horizon.

My position is that the more "price momentum" appears to increase, the more the risk also increases—like on a train. I take "price momentum" to be more of a psychological concept, rather than rooted in reality. Prices go up, of course, but do they really have momentum that will carry them up inexorably further, or isn't it just a matter of people's expectations? Once these expectations get rooted in people's minds, they give the future "visibility." Once you truly believe that prices are going up, what will it take to persuade you otherwise?

That's why it seems best to stick with objective probabilities of ruin as measures of true risk. The apparent safety that comes with "price momentum" is illusory.

**Jesse**

**Jesse,**

Yes. Your points are all correct.

But my point is that if you are always worried about the worst case catching up with you, then you will miss out on opportunities during the best times.

I am not convinced that it is impossible to see the signs of changes to the environment between the stages. My suggestion is that if you expect those changes and look for the signs, then you are more likely to be prepared.

**Dave**

**Dave,**

I'm glad you agree with me. I was only pointing out the increasing risk that goes with rising prices, and I was not recommending that a person not do it. To make profits you have to take risks, and bigger profits generally require bigger risks, not smaller ones. At any rate, that's what we learned for the exams on Portfolio Theory and the Capital Asset Pricing Model.

I think that risk is cyclical just the way that prices are cyclical, but when I read your article closely I realized that you never actually said that. You argued against a two-stage view of risk, but it wasn't clear if you were going to replace it with a four-stage view, or what.

**Jesse**

**Jesse,**

No, as I said in my first response, increased risk and increased reward do not necessarily go together.

What I was agreeing with is that it is difficult to stop taking low risk profits and that leads to sliding into taking high risk profits.

What I am trying to say is in direct conflict to CAPM + MPT.

**Dave**

**Dave,**

Well, that certainly clarifies things.

I can't say that my experience bears out your point of view. I've heard a lot of people say retrospectively, "The easy money has already been made," who weren't calling it easy money when the same investment was viewed prospectively. That's why they say that hindsight is always 20-20.

Occasionally, I hear someone say prospectively, "This is a one-way asset," meaning there is only one direction the price of this asset goes, but most of the time those people were about to receive a rude awakening.

**Jesse** A

---


**Jesse Hobbs, FSA, American General Life & Accident,** can be contacted at *jesse.hobbs@agla.com.*

**Dave Ingram, FSA, CERA, MAAA, Willis Re,** can be contacted at *dave.ingram@willis.com.*