

Lamppost-in-the-dark mathematics

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From Mr Alex Kampa.

Sir, Two years ago, in the aftermath of the Amaranth implosion, John Kay wrote in the FT about this being a nine-sigma event according to standard risk metrics – “a probability so low that such events simply do not happen” (“[Amaranth and the limits of mathematical modelling](#)”, October 10 2006).

I do not know how many sigmas the events of the past several weeks rate, but the list of things that “simply do not happen” seems to be growing ever longer. This reminds me of the following story.

A mathematician is looking for his lost wallet under the only lamppost that is lit on a dark street. A passing man inquires: “Just where did you lose your wallet?”

The mathematician points into the darkness and says: “Over there.”

The passer-by is puzzled and asks: “Then why are you looking for it here?”

The mathematician replies: “Because here, there is light.”

Today, almost all of financial mathematics and models taught at universities are based on the normal distribution, one way or another. This is because the mathematics of dealing with this distribution are well known. Unfortunately, these models are patently flawed and their limitations come to light during financial crises. Alternatives do exist – researchers such as Benoît Mandelbrot have been working on them for decades. These alternatives have been ignored by academia and regulators alike for too long.

It is time to discard lamppost-in-the-dark financial mathematics and start looking at how markets really work, even if the mathematics are more challenging and the models more uncertain. If the events of the past few weeks do not teach us this, then what will?

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