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The Tech 40 and Influencing Institutional Investing

Northfield Information Services Commentary

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It recently came to my attention that I had been named by Institutional Investor magazine as one of the "Tech 40." The honor is bestowed upon the forty executives with the greatest influence on financial technology used by the institutional investing community. While I'm very grateful to the publication editors for this honor there was certain irony in the fact that the award was announced in July of 2010, and I had just become aware of it in April of 2011. My first thought was that the public relations department at Northfield needed more resources. Then I remembered that Northfield has no public relations department. In our more than twenty-five years of operation, we have not been a publicity seeking organization. We have never taken out advertisements, put out press releases or paid a fee to be put on the presentation agenda at an industry conference.

In the short profile of Tech 40 recipients that the magazine posted on the Internet, they cited my involvement with Harry Markopolos in the uncovering of the Madoff fraud. Back in 1999 Harry and his colleague Neil Chello met with me to discuss one of their hedge fund competitors who they described at the time only as Manager B. They asked me to carry out some analytic tests related to a paper I had written on mutual fund objective fraud (diBartolomeo and Witkowski, FAJ, 1997). Harry's versions of events appear on page 35 of his book, *No One Would Listen*. By the top of page 36, less than 24 hours had

past and Harry concludes "Bernie Madoff was a fraud. And whatever he was actually doing, it was enough to put him in prison." The real truth of the matter is that I didn't know Manager B was Madoff until around 2004, and had forgotten the matter entirely until I got an email from Harry a couple days after Madoff had turned himself in to police authorities. What is profound about this incident was that by using standard techniques from the published literature (admittedly our own techniques), we had estimated that the likelihood that Madoff was operating entirely legally to be approximately one in two hundred thousand in less than a day. How could the dozens of analysts purportedly doing performance analysis and due diligence for Madoff investors fail to see what was so obvious to us?

There have been a few other situations where I've gotten some publicity within the industry. My photograph appeared on the cover of *Risk Professional* magazine in 2009 relating to a story called "They Told Us So." This article was about financial researchers who had warned of the excessive risk taking that led to the recent global financial crisis. In my case, the writer's interest focused on a brief white paper that I had written in 1999 at the request of a client in regard to how credit rating agencies modeled collateralized loan securities, the forerunner of today's complex mortgage securities. At that time, I argued that the modeling of the correlation among

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potential defaults on the loans was handled in a very unsophisticated and inadequate manner. At the time, the rating agencies recognized the “rough” nature of the analysis and were otherwise extremely conservative in the rating process to compensate. Similarly simplistic views of default correlation within an analytic approach known as “Gaussian copula” proved to be the root cause of the stupendous failure of rating agency credit analysis during the recent crisis.

Not all of our mentions in the press have been positive. A couple of years ago a columnist in the Financial Times put forward the idea that the global financial crisis was the fault of Northfield and MSCI Barra. The logic ran that when hedge funds needed to reduce leverage in August of 2007, they all decided to sell their most liquid equity positions while trying to keep the overall properties of their equity portfolios consistent with their current strategy. It was argued that most of the managers used risk models from the two vendors, and thereby all chose to sell similar securities creating a severe imbalance between buyers and sellers that led to a crash of market prices, which in turn cascaded to become the global financial crisis. When the article ran we were amused that the FT considered us so influential on stock markets that the global financial crisis had become our fault. While it is true that a large number of asset managers and hedge funds use models from these two firms, there is a severe flaw in the logic. Asset managers and hedge funds have gravitated to the use of these models for an important reason: the models actually work well in estimating future market risks and describing the sources of those risks. Placing blame on the risk vendors is like having someone yell “FIRE” in a crowded theatre, and then blaming the light bulb manufacturer because the room lighting allowed the theatre patrons to stampede the exit faster than they could have done in the dark.

If Northfield or I did have significant influence on the institutional investment community, I would want to use such influence to curtail two very disturbing but related trends. The first trend is the dilution of analytical knowledge among those who are perceived as “quants.” When Northfield began in the 1980s, I estimate that there were a few hundred individuals in the world among both practitioners and academics who really “got it” and had a broad conceptual understanding of all the related disciplines of finance, economics, statistics, and computational algorithms. Today, there are literally tens of thousands of people who have a job title relating to “quantitative financial analyst,” but I would estimate the number of people who really “get it” to still be just a few hundred. It is saddening to see the ever broadening lack of rigorous thought and analysis, as many financial institutions use quant methods as window dressing to obfuscate their lack of true strategic insights and professional ethics.

An even more disturbing trend is that the lack of real sophistication of quant analysts has led many vendor organizations to the institutional investment community to knowingly sell analytic products and models of dubious value. The obvious and most widely observed example is the aforementioned use of Gaussian copula (Li, Journal of Fixed Income, 2000) methods for creating credit ratings of exotic mortgage securities and credit default obligation. The name of the process should be a clue. The word “Gaussian” is the physics terminology for a normal distribution. I can think of few things less normally distributed than the economic payoffs from a potential bond default. To get this approach to even vaguely make sense in the real world one must make the heroic assumption that the correlations among loan defaults are sufficiently close to zero as to conform to the requirements of the Central Limit Theorem of Statistics. Sadly, it was a bad assumption and everyone involved knew that. Similarly heroic assumptions of clearly dubious legitimacy are present in many of the analytical models supplied by

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vendors for asset allocation, portfolio risk, optimization and derivative pricing. I am reminded of a passage from the play, *The Doctor's Dilemma* by George Bernard Shaw:

"Even trained statisticians often fail to appreciate the extent to which statistics are vitiated by the unrecorded assumptions of their interpreters... It is easy to prove that the wearing of tall hats and the carrying of umbrellas enlarges the chest, prolongs life and confers comparative immunity from disease. A university degree, a daily bath, the owning of thirty pairs of trousers, a knowledge of Wagner's music, a pew in church, anything, in short, that implies more means and better nurture... can be statistically palmed off as a magic spell conferring all sorts of privileges... The mathematician whose correlations would fill a Newton with admiration, may, in collecting and accepting data and drawing conclusions from them fall into quite crude errors by just such popular oversights as I have been describing."

As I sit in my office writing this essay, I can look out over the North End of Boston including the home of Paul Revere. If I have had any influence at all over the institutional investment community in my career, I would like to think it comes from making Northfield an organization where rigorous thinking, honest discourse, and rapid dissemination of important concepts are favored over commercial self-interest. It is deeply disturbing that I've managed to publish more than twenty research papers, book chapters and books relating to investment finance that were subject to peer review. This count is higher than the entire combined research staffs of some of our competing organizations. Too many people have portrayed quant analysts as akin to religious gurus. It is unfortunate that many people in our industry seek to be called guru, without realizing the proximate cause of their success is that the audience members simply cannot spell "charlatan."