Abstract

Important consequential risks are typically unpredictable and rare. While predictable risks may be prevented, unpredictable risks test our resilience and our ability (agility) to respond. The financial meltdown of 2008 is an example of such risks with an aggregate fate of close to 1000 financial institutions (including busts such as FNMA, Bear Stearns, Northern Rock, Lehman Brothers, etc.) who lost over 1 Trillion dollars on a single error, more than was ever earned in the history of banking.

To confront this evolving risk reality, N. N. Taleb suggested mapping randomness and decision making into a quadrant with two classes of randomness and decisions. The type of decisions referred to as "simple" or "binary" lead to decisions such as "very true or very false", "matters or does not matter". By the same token, statistical tests in the control of quality may state, "A product is fit for use or the product is defective". Statements of the type "true" or "false" can then be stated with some confidence interval. A second type of decisions is more complex, emphasizing both its likelihood of occurrence and its consequences.

Two layers of randomness, very distinct qualitatively and quantitatively, are suggested by Taleb. A first layer is based on "forecastable events", implied in finite variance (and thus thin tail probability distributions) and a second based on "unforecastable events", defined by probability distributions of fat tails. In the first domain, exceptions occur without significant consequences since they are predictable and therefore preventable. The traditional random walk, converging to Gaussian-Poisson processes provides such an example. In the second domain, large consequential events are experienced which are more difficult to predict. "Fractals" and infinite variance (Pareto-stable and chaotic) models provide such examples.

The seminar will be present the above concepts and ideas. It is based on the paper by Kenett and Tapiero on "Quality, Risk and the Taleb Quadrants" that has been listed in the top 10 papers downloaded by SSRN in the section for Decision-Making under Risk & Uncertainty. See also a related paper by Kenett and Shmueli "On Information Quality".

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1433490
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1464444

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Books by R. Kenett:

1. ***Modern Industrial Statistics: Design and Control of Quality and Reliability*** (with S. Zacks), Duxbury Press, San Francisco, 1998, Spanish edition 2000, 2nd paperback edition 2002, Chinese edition 2004.
2. ***Multivariate Quality Control: Theory and Applications*** (with C. Fuchs), Marcel Dekker Inc., New York, 1998.
3. ***Software Process Quality: Management and Control*** (with E. Baker), Marcel Dekker Inc., New York, 1999, Taylor and Francis, Kindle Edition, 2007.
4. ***Modern Statistics: A Computer Based Approach*** (with S. Zacks), Brook/Cole, Pacific Grove, CA 2001.
5. ***The Encyclopedia of Statistics in Quality and Reliability*** (Editor in Chief, with F. Ruggeri and F. Faltin), John Wiley and Sons, 2007.

SCUOLA DI DOTTORATO IN BUSINESS AND MANAGEMENT

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FONDAZIONE "Franca e Diego de Castro"

ON BLACK SWANS AND THE TALEB QUADRANTS

PROF RON S. KENETT

Turin, 20th, October 2009, 15:00 - 18:00

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