

A Comment on Peter Bernstein’s “Against the Gods: The Remarkable Story of Risk”

by Orio Giarini*

1. A book to read and reflect upon

Books and studies about risk and uncertainty in economics, philosophy, science, society, psychology, politics and even literature are now flourishing worldwide. A real must is the book by Peter L. Bernstein, *Against the Gods: The Remarkable Story of Risk*.¹

We have read it with great satisfaction and pleasure, particularly because of its contribution in confirming some fundamental ideas, which have motivated the Geneva Association and many of its initiatives in the field of economic research.

It is very enlightening to read at the beginning “what it is that distinguishes the thousands of years of history from what we think of as modern times! The answer goes way beyond the progress of science, technology, capitalism and democracy . . . the revolutionary idea that defines the boundary between modern times and past is the mastery of risk.” This book is, therefore, by itself, a powerful indicator of the fundamental changes affecting societies around the world. It depicts their predisposition to consider a new frame of reference for their future: the idea that, for society at large, be it on the economic, philosophical, or cultural level, development and progress imply accepting the risks and uncertainties of life as a fundamental fact or point of reference. Until now, civilizations have avoided or dismissed risk and uncertainty, initially with the help of the gods, then with the help of deterministic science. In the future, a better, more civilized world might arise, capable of better confronting, and subsequently better managing, the challenges and changes resulting from risk management.

2. The relevance of insurance

It is interesting to note that in this book, as well as in many others, when one commences to trace the origin of rational ways to control risk, the large majority of examples given are drawn from the history of insurance. Similarly, in this case, one has the impression, in the introductory chapters, that the author is actually writing a book about insurance. Furthermore, in the descriptions of the various steps to facilitate the understanding of the notion of risk, insurance is gradually forgotten and gives way to a general description of risk which then coincides with financial and banking activities.

This represents a long tradition of dominance of banking and banking-related financial activities, particularly in economic science, without exploring too deeply, the extent of the fundamentally different connotations of the insurance business. For example, the book does not make any reference to the difference between a pure risk and a speculative risk. It does not

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¹ Published by John Wiley and Sons Inc., New York, 1996, 683 pages.

explain that insurance concerns risk management based on the management of a mutuality of homogeneous risks on one hand, and the events linked to the intrinsic vulnerability of the environment (social, psychological, human and physical) on the other.

Kenneth Arrow has reassured financial economists for decades by stating that the premium paid to an insurance company creates a conditional claim: it would be like depositing money in a bank and reclaiming it, the only difference being that one could retrieve it in the form of a promised sum on condition that a specific event occurs. In fact, it is the mutuality of the risk that is essential (how a community of people with a homogeneous risk contribute to others' vulnerability costs). Furthermore, it is also interesting to note that the very idea of moral hazard is only briefly mentioned once or twice and that Josef Stiglitz, for example, who has written about this subject so extensively, is not mentioned anywhere. Moral hazard is an essential issue: it must be controlled in order to render insurance possible and the fact that it represents the dividing line between pure and entrepreneurial risks should be underscored.

Subsequently, this leads us to pinpoint some other fundamental issues that could eventually contribute to the realization of this remarkable story of risk.

3. The quest for certainty

Against the Gods contributes in a powerful way by underlining the extent to which risk and uncertainty are at the core of modern society, in contrast to historical experiences in previous decades.

The basic issue here is to remember and understand that since the Renaissance, Western culture has been at odds with the notion of certainty, which excludes uncertainty and risk. Traditions from Descartes to contemporary neo-classical economics have represented a quest to uncover universal facts and laws in order to attain a deeper understanding of specific aspects of human activities.

Science has often been used as a method of acquiring complete knowledge: a goal that has been assumed to lie in the near or distant future. Lack of knowledge and information has, therefore, very often been equated with ignorance, which the advancement of science would one day eliminate.

Such thoughts have been a key factor in marginalizing, in cultural terms, the activities of the insurance industry: dealing with uncertainties, failures of systems, accidents, and events that a deeper and more "scientific" knowledge would one day eliminate. Consequently, considering this type of scientific vision, why waste your time studying insurance? The advancement of knowledge, a guarantee of increasingly refined understanding and forecasting of the future, would have rendered any insurance activity obsolete.

This implicit belief in a particular notion of uncertainty, based on a specific vision of science, has traceable roots in *deterministic philosophies*.

In economic terms, the basic paradigm of the industrial revolution has been the notion of equilibrium, which reflects Cartesian and deterministic philosophies, where, in fact, risk and uncertainty are indicators of inadequate knowledge. The neo-classical economic school today is confronted with a dilemma: within the notion of economic price equilibrium, economists refer to incomplete information, incomplete markets, and asymmetrical information. These issues are real and interesting up to a point. Nevertheless, the basic frame of reference (that is, equilibrium, certainty) still creates a key deterrent to a deeper economic understanding of what is inevitably linked to insurance, concerning the fundamental uncertainty of society and the current economic system.

The real point of reference here, to begin with, is the *indeterministic philosophy* where,

essentially, static time gives way to a real flow of time, and lack of information and uncertainty are an inevitable and incompressible part of any living system, simply due to the fact that the future is open and not necessarily determined.²

Against the Gods does not introduce the fundamental discussion between deterministic and indeterministic systems, conditioned by the present dominance of neo-classical economics. It does, however, provide some insight into the more basic issue of uncertainty with reference to J.M. Keynes and Frank Knight. There is no evidence of any direct or indirect reference to the philosophy of Karl Popper and Ilia Prygogine and no attention is given to the fact that hard science, particularly after Einstein, has given way to predominantly indeterministic models.

Accepting such a vision, at least at the philosophical level, is a blow to the notion of general equilibrium. It would require the fundamental revision of a number of paradigms in modern economics. This revision has already been initiated and has gained increasing relevance in insurance activities (and risk management). It is clearly pushing economic thinking in a new direction, accepting interdeterministic views, the notion of real continuous time, and of an open society oscillating toward many futures.

4. From the industrial revolution to the service economy: a new notion of value

Deterministic thinking and neo-classical economics have been quite adequate in analysing and explaining the concept of the industrial revolution – a concept in which new technology has promoted new systems of production, the monetarization of the production system, and the accumulation of capital. However, we now live in a service economy in which the large majority of all manufacturing systems depend on service activities rather than pure manufacturing. The economic value itself is only partially related to the accumulation of costs for the production of material goods. Research and development, within the manufacturing system, has become an increasingly determining investment factor with all the inherent uncertainties arising from its, and other services', management. Furthermore, it is the utilization and economic performance of systems that determine the real increase in wealth. Utilization takes place in a period of time where the length, and even the inherent productivity, is just a matter of probability. Therefore, the value itself is at present less and less the result of an *ex post* manufacturing production cost and more and more an *ex ante* probability definition of costs in the future performance of a system. Insurance and risk management are an essential, even if not a unique, tool for the organization and guarantee of this performance. Prices themselves are increasingly similar, even when fixed by the modern manufacturing industry, to the fixing of a premium as they must integrate costs which will arise from the utilization (and recycling or waste) process.³ It is, therefore, not surprising to find managers speaking of an increasingly uncertain world.

5. Some specific facts

Contrary to the expectations according to which insurance activities should have faded out with the increase of scientific research, we can easily observe that, since the end of World

² Even when defined as a dynamic system by Paul Samuelson it is, in fact, nothing more than comparative statics.

³ We have dealt with these issues in *Dialogue on Wealth and Welfare*, Pergamon Press, 1980, p.386; *Limits to Certainty*, Kluwer Academic Publishers, 1993; *The Employment Dilemma: Report of the Club of Rome* (Forthcoming).

War II there has been a worldwide development in insurance at an average rate consistently 1 or 2 per cent higher than the average growth in GNP. This in spite of the fact that the official insurance statistics represent an understatement, as they fail to include all economic activities which are insurance by nature: for example, the captive companies' business within an industry. In some countries, they represent a percentage equivalent to the official figures for non-life industrial insurance business. Furthermore, it is now easy to understand (and for this reason it is also important to define a pure risk) that the growth of insurance is due to a very simple and clear development. In the age of the horse and carriage, with inefficient technology, insurance was of no relevance. It is, however, pertinent in the age of airline transportation. What has changed is a diminution in the frequency of accidents but an increase in the severity of the events. This fundamental modification has deeply influenced performance and has increased its economic significance as an element of cost. It is from here that many key notions, such as the economy of scale and productivity, must be adapted.

We should consider this fundamental paradox: the vulnerability increase is linked to greater technological efficiency where the acceptable margin of error is increasingly smaller. Modern technology's greatest efficiency is, contrarily, accompanied by an increase in uncertainty and pure risk in all economic endeavours. What began as an important phenomenon in the manufacturing sector over 30 years ago has extended into the social sector (the Welfare State), and into the financial and banking sector.⁴

Therefore, what is at stake is the very modification in the structure of production in the industrial revolution, and it is this phenomenon that has created a situation in which management of risk has become a fundamental economic and social issue for the future of our society.

6. "Against the Gods"?

The book's title itself still reflects the opposition, typical of the deterministic tradition and way of thinking in Western society, where in the past religion and science have often been in competition.

In fact, contemporary science has accepted a method that religion will never adopt, namely, that any law of physics (and, therefore, even more of economics) is accepted, not as a matter of certainty and truth, but as a point of reference to be improved by a process of falsification, in which any truth is actually considered partial. Further progress is only possible when it depicts points of weakness. Einsteinian laws are not a subject for religious contemplation or confirmation: they are utilized as a reference in the search for how, and to what extent, his theory is at least partially incomplete or, on some points, even wrong. This is not only a scientific, but possibly also a social method of inquiry into social and economic matters, provided one abandons deterministic attitudes. After all, the theory that the earth is flat was quite adequate if someone was to walk only a few kilometres; it is essential to understand that the earth is round when one is required to navigate, by ship or plane, around the globe. Travelling through outer space is even more complicated as the motion of the sun and planets as well as their gravitational impact must be taken into consideration.

Religion is a question of faith and, as such, is not required to enter into competition with science. This occurs only in a society where science has deterministic pretensions.

⁴ See "The Role of Risk Management and Insurance: Looking Beyond the Neo-Classical Views on the Economics of Uncertainty" by O. Giarini, *The Geneva Papers*, No. 80, July 1996.

Having said all this we highly recommend the reading and in-depth study of this book by Peter L. Bernstein: it is a powerful contribution to the quest for a new civilization in which human beings will ultimately accept the basic uncertainty of life more completely and, subsequently, understand that it is in this way that freedom and performance of any kind (cultural, artistic, scientific, and socio-economic) are a consistent probability for a better future. The very notions of future and progress can, in this way, find a new birth after being destroyed by the search for certainty in science, as well as social and political behaviour. This has had disastrous political consequences for the greater part of the last century. We can now search for something better.