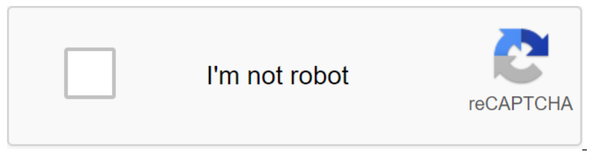

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Frank j fabozzi pdf

Frank J. Fabozzi, CFA, is one of the most prolific, compelling and insightful voices in modern finance. As an academic, researcher, author and editor, he helped shape our understanding of discipline, and his contribution earned him the James R. Vertine Award from the CFA Research Foundation and the C. Stuart Sheppard Award from the CFA Institute, among other awards. Indeed, CFA charterers and those who studied at the exam will be familiar with his work. He is responsible for creating a significant portion of the curriculum. A common theme of his scholarship was the state of academic finance and financial theory. He has long been an eloquent critic of how finance and economics are taught in colleges and universities and how traditional theory cannot explain actual market behavior. For more on his point of view, we talked to him personally about the shortcomings he sees and their potential fixes. Below is a slightly edited transcript of our conversation. CFA Institute: Over the past two decades, you have been critical of academic economics and finance. What's wrong with these disciplines? Frank Fabozzi, CFA: My criticism of the academic economy is that models built by economists mostly refer to market agents as robots. They make decisions according to certain rules, and built models are labeled as rational models. Since finance is an area of the economy, the same criticism applies to models built by financial economists. The key tools used by economists are higher-level calculus and mathematical analysis. Rational models in finance have been attacked by a behavioural financial camp that has demonstrated the gap between model behaviour and real-world investor behaviour. The concern about the academic economy also comes from practitioners. For example, in 2003, Charlie Munger pointed to the inability to take into account psychology when designing economic models: If you want to go through life as a one-legged person in a contest on why, be my guest. But if you want to succeed as a strong person with two legs, you have to pick up these tricks, including doing economics, knowing psychology. The problem with relying on rational models and treating them as the basis of finance is that the new findings are incompatible with the underlying theories dismissed. This is the main point that Sergio M. Focardi and I made when we argued that the economy as it stands describes not an empirical reality, but an idealized rational economic world. It is significant that in the financial economy deviations of empirical prices or profitability from theoretical models are called anomalies. True empirical science will revise its models so that they empirical data. The financial economy, however, takes the opposite approach and considers deviation deviations idealized economic rationality is an anomaly of true empirical price processes. In the 1970s and 1980s, an academic could not be published in a peer-reviewed financial journal if their research contradicted prevailing theory, such as the Capital Asset Pricing Model (CAPM). For example, in the late 1970s, a prestigious financial magazine looked for articles written jointly by academics and practitioners. Thinking that the magazine's editorial office was sincere, I co-authored an article with then-Merrill Lynch White Weld Chairman Tom Christie. Our thesis was that securities can be structured/configured for investors using the active side of the balance sheet. Basically, it provided for a general plan for structured financing. The review we received in response was short and went a bit like - the ideas in the document made no sense because they were incompatible with CAPM! Previously, you described the misuse of calculus and mathematical analysis of a higher level in the economy. Why are these tools the wrong? Excessive use of calculus is a symptom of the subject's stagnation and a disservice to students who seek to work in asset management. Economists must combine complex mathematical tools and empirical methods, while recognizing the limitations of an area where experimentation is rarely possible. Who needs Newtonian finances? Marcos Lopez de Prado and I explained why accepting calculus by economists was a historical accident and a question of economists mechanical vision of the world. Mostly, economists recognized that calculus was extremely successful in physics and technology, where it acquired its track record. They hope to replicate this extraordinary success by adopting the same conceptual framework. And the cumulative knowledge in applying calculus to real problems is impressive. Charlie Munger, on his list of weaknesses in the academic economy, called it the physics of envy. He noted that the term was borrowed from (another type of) envy, as described by one of the great idiots in the world, Sigmund Freud. Ultimately, calculus was not effective in describing economic and financial phenomena. Focardi and I offer a few explanations as to why economists seem to prefer safe calculus soil over the unsafe basis of reality. When a physicist asked Kenneth Arrow, winner of the 1972 Nobel Prize in Economics, why economists used such complex mathematics, given that they had little corroborating data, Professor Arrow replied, It's just because we don't have enough data that we use complex mathematics. He went on to say: We must ensure a logical consistency of our arguments. Today, this proposal is more invalid than ever, as all sorts of sets have become available in recent years There is currently no justification for not alternative data sets that inform us in great detail about the daily activities of hundreds of millions of people. Economists apply statistics to all sorts of data. Is their approach evidence-based? It's a false impression. Econometric models are totally inappropriate to model the complexity of economic systems. Economists cannot blindly apply statistical methods that have been developed for experimental biology. As Lopez de Prado and I explained, the economy does not allow experiments to be conducted on the basis of large, independently taken samples of data from the stationary system. It is possible to produce a new 50-year data set for 50 years, and by that time the system will be developing much faster than natural systems. The paradox in economics is that researchers either use non-empirical tools - calculus and complex mathematics - or paleo-statistical tools that were developed before the advent of computers. Compare a popular econometrics textbook like William Green's with a chemistry textbook like Matthias Otto's. Other areas use machine learning and other computational methods. But these methods are rejected in economic magazines as black boxes. Econometrics has lost the train of innovation, and instead has become a stagnant topic, to the surprise of many statisticians outside our field. It's as if economists choose to use only econometrics because it's one toolkit that allows them to confirm their CAPM or factor of investing biases. Theories in the natural sciences - for example, Einstein's theory of relativity - are models that predict and do not contradict reality. CAPM and other economic theories are not practitioners all the time. Why, then, does the Nobel Prize in Economics always have the word Science in the title? What my co-author Sergio Focardi and I argued is that the basic economy, as it is known today, is not science in the sense of physical sciences, because it does not describe the real economy, but an idealized economically rational world. The inability to popularize econophysics, the discipline for which the physicist H. Eugene Stanley defended in the mid-1990s, is quite mesmerizing. Instead of adopting an interdisciplinary approach that strictly adheres to the principles of empirical science in their research, economists have dismissed it as unholy. In the idealized pseudo-irrational world of the current economic theory, there is no real place for major crises. The financial economy, in particular, is based on the assumption that economic volumes may deviate from their theoretical value, but market forces will quickly shift them to theoretical values. This assumption was inadequate. This failure prevented the economy from helping asset management establish itself as something other than a casino. Empirically scientific look at on that's what it takes. Unsurprisingly, the restoration of investor confidence - as we demonstrated in investment management after the global financial crisis from the CFA Institute Research Foundation - remains one of the profession's biggest challenges. Would you say then that economics is a science in doing? In fact, we must restore the economy as an empirical science. Some results have been obtained. Network theory has advanced significantly in the representation of interactions between economic agents. Chaotic models and their attitudes to statistics are now better studied. Machine learning methods were able to provide portfolios that outperform Markowitz's off-sample solution. A new type of statistics may be required to work with the level of uncertainty that characterizes the economy and finances. We distinguish between reliable statistics for most of the data and the theory of extreme values for tail modeling. We have learned to make rough predictions of perhaps very large results that have never been experienced in the past. But we don't have the tools to deal with a very high level of uncertainty. Recently, the focus has been on getting more science data into the financial curriculum programs that Lopez de Prado, Joseph Simonyan and I call Financial Data Science. We emphasize some of the benefits of this area for practical investment management. This year, Marcos, Joe and I co-founded the journal Financial Data Science, published by Pageant Media. The inaugural issue was released in January. Machine learning, the data science industry, includes a family of computational techniques that facilitate automated pattern learning and data-based predictions. While there is no universal definition of data science, it combines statistics and calculations to detect or bring order to complex data in order to raise awareness of decision-making. Thus, it is inherently a practical effort, just like finance, and therefore especially suitable for investment applications that should be in the curriculum of all financial programs. As Marcos and I noted in our Newtonian editorial finance, there are some useful subjects in addition to the science of data that are rarely taught in economics and financial programs, including combinatorics, graph theory/networks, core theory, information theory, experimental mathematics, algorithms, complexity theory, and data structure. We believe that computer scientists can be better prepared to solve financial problems than student funding. This is one of the reasons why banks and hedge funds hire data scientists and physicists for positions previously reserved for graduates of financial faculties. How the scientific community should change the way they Finance? This is an open question that university economic and financial faculties should be talking about. As a rule, university curricula on economics and finance are now divided: divided: maths and programs without math. Those with mathematics teach complex calculus and stochastic calculus. Those who do not have mathematics still consider it necessary and try to teach diluted and simplified versions of calculus and stochastic calculus, mainly in the form of econometrics. This situation is unsatisfactory. Students of the high-thematic program end up feeling like they are in an ivory tower and do not develop a hard data discipline of empirical sciences. In contrast, students in non-mathematical curricula come to the view that logic and mathematics are not optional and do not apply to real life. In practice, both positions are unfounded. In investment management practices, highly developed calculus is used mainly in the business of financial derivatives. Today, students who want to be quants need to know calculus and stochastic calculus. But they should keep in mind that the evolution of modern economies and theories of financial markets is likely to require new, perhaps different mathematical concepts. They should be very open to new ideas. But the opposite position that mathematics is a useless option is also very dangerous. Investment management requires careful logical thinking and processing of vast amounts of unstructured data. Challenge universities and business schools like Gilbert Strang, a world-renowned professor of mathematics at the Massachusetts Institute of Technology says, is to present the math that is most useful to most students. These teachings will help students reason strictly without limiting the straitjacket of calculus. For more from Frank J. Fabozzi, CFA, don't miss stock valuations: Science, Art, or Craft? co-authored with Sergio M. Focardi and Caroline Jonas, the last of many contributions to the CFA Institute Research Foundation. If you liked this post, be sure to subscribe to an enterprising investor. All reports are the author's opinion. Thus, they should not be construed as investment recommendations, nor do the views expressed necessarily reflect the views of the CFA Institute or the author's employer. Image credit: ©Getty Images/hannahgleg Continuing Education for the CFA Institute Of Select Articles Select Articles are eligible for a Continuing Education (CE) loan. Recording credits is easy using the CFA Institute Members App, available on iOS and Android. Android. frank j fabozzi books. frank j fabozzi pdf. frank j fabozzi series. frank j fabozzi net worth. frank j. fabozzi linkedin. frank j. fabozzi google scholar. frank j. fabozzi yale. frank j fabozzi fixed income