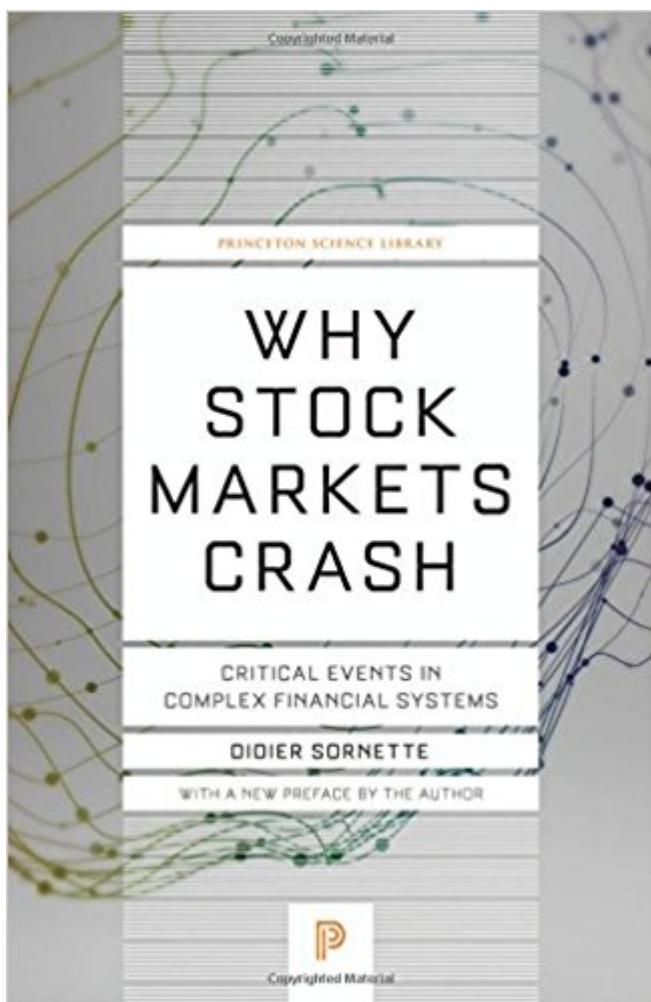


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# Why Stock Markets Crash: Critical Events In Complex Financial Systems (Princeton Science Library)



## Synopsis

The scientific study of complex systems has transformed a wide range of disciplines in recent years, enabling researchers in both the natural and social sciences to model and predict phenomena as diverse as earthquakes, global warming, demographic patterns, financial crises, and the failure of materials. In this book, Didier Sornette boldly applies his varied experience in these areas to propose a simple, powerful, and general theory of how, why, and when stock markets crash. Most attempts to explain market failures seek to pinpoint triggering mechanisms that occur hours, days, or weeks before the collapse. Sornette proposes a radically different view: the underlying cause can be sought months and even years before the abrupt, catastrophic event in the build-up of cooperative speculation, which often translates into an accelerating rise of the market price, otherwise known as a "bubble." Anchoring his sophisticated, step-by-step analysis in leading-edge physical and statistical modeling techniques, he unearths remarkable insights and some predictions--among them, that the "end of the growth era" will occur around 2050. Sornette probes major historical precedents, from the decades-long "tulip mania" in the Netherlands that wilted suddenly in 1637 to the South Sea Bubble that ended with the first huge market crash in England in 1720, to the Great Crash of October 1929 and Black Monday in 1987, to cite just a few. He concludes that most explanations other than cooperative self-organization fail to account for the subtle bubbles by which the markets lay the groundwork for catastrophe. Any investor or investment professional who seeks a genuine understanding of looming financial disasters should read this book. Physicists, geologists, biologists, economists, and others will welcome *Why Stock Markets Crash* as a highly original "scientific tale," as Sornette aptly puts it, of the exciting and sometimes fearsome--but no longer quite so unfathomable--world of stock markets.

## Book Information

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## Customer Reviews

It's everybody's favorite topic of conversation at the moment: why did the Dow and the Nasdaq tank so horrifically, and where did all the money go? UCLA professor Sornette does his best to tackle those questions. While CNBC anchor Ron Insana's recent *Trend Watching* took a reader-friendly look at the history of market bubbles, Sornette's approach is decidedly different. Befitting his status as an expert in geophysics, the author loads the text with enough charts, graphs and advanced economic theory to choke John Kenneth Galbraith (one chapter subheading, for instance, is "The Origin of Log-Periodicity in Hierarchical Systems"). It's a meaty book, with helpful autopsies of past crashes ranging from tulip mania in the Netherlands to the Nasdaq crash of April 2000, as well as information on how crashes might be predicted in the future. Unfortunately for the average investor who tends to get burned after these bubbles, Sornette's conclusion is that a mixture of "systemic instability" and plain old human greed means that market bubbles aren't about to disappear anytime soon. And neither, of course, will the subsequent crashes. Copyright 2003 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

"While it's difficult to pinpoint what type of trader would enjoy this book the most, I think there's something for everyone, whether you're a quaint, technical trader or a fundamentalist. . . . I feel that I'm smarter after finishing this book; I thoroughly enjoyed the lengthy journey, and would recommend this to any stock market enthusiast."--Jeff Pierce, *Seeking Alpha*"A highly recommended, enjoyable, well-researched, and thought-provoking book for anyone interested in stock markets and the modeling of financial processes."--Rick Gorvett, *Journal of Risk and Insurance*"The book is written in a readable style and does not require technical knowledge. Any reader interested in a serious approach to the origin and possible prediction of financial bubbles will enjoy reading it."--Josep M. Porra, *Journal of Statistical Physics*"Sornette's book is not just about finance and economics; it is also a mesmerizing introduction to game theory, fractals, catastrophe theory, critical phenomena, and much more. No prior knowledge of finance or economics is needed to understand the book. . . . Throughout the book, Sornette makes numerous, vivid comparisons

with many other fields in which the various mathematical tools he describes can be applied."--Frank Cuypers, Physics Today

The author discusses the application of non-linear modeling techniques on the financial market. Given the behavior of financial market is the result of the inter-working of countless investors, it's very surprising and interesting to see these modeling techniques actually produce some very good results. In particular, the author presents the logic behind the formation and the bursting of bubbles, and, more importantly, provides insight of what we can expect from the financial market in the long term. Please note this is a very technical book for the general public. You don't need a PhD to understand it, but you do need to be comfortable with data plots and discussions of equations. You also need more than a general understanding of statistics; concepts such as correlation, regression, and model fit should not be intimidating to you. Some background in Physics will also be helpful, especially if you already understand the equation of oscillatory motion.

An excellent book that uses mathematical models of critical events from physics and applies them to stock market crashes. Sornette claims that market crashes leave a distinctive precursor signal in market price data that can be measured to predict the crash. If you are mathematical enough to follow at the level of high school math this book presents an insightful picture about the log periodic power waves that emerge in stock price time histories when bubbles form. These can be statistically detected and are a very good predictor of a crash.

Starts with a very basic and intuitive background to physics phenomena and their application to cycles in stock market. Second part however focus a lot on small details of these models which for most readers feels very nuisance

very difficult for me to follow, but that is not the fault of the book as much as it is the reader.

Actually it is an old book with only the perfect updates.

An excellent alternative explanation for market mechanics. Should be required reading for all investors, and especially economists. Explains how markets work in the 'real world' and not just in academia. Highly recommended. 100%

Didier Sornette applies his own successful physics research to financial crashes with compelling back testing across a number of different investment arenas and time periods: compelling! He also pulls from a number of different disciplines to address behavioral and observed investment trends: insightful!

I recommend this book to anyone that is a quant or financial market researcher. Dr. Sornette wrote a wonderful book and has explained his theory very well to describe why there are upper limits to financial markets, I will be using this research to further my own academic research.

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