Could this be the end of stock market crashes?

October 19 2012

(Phys.org)—A 72-year study of the Dow Jones could help avoid the kind of stock market crash that struck the world economy in 2008.

Professor Tobias Preis has led a study of the second oldest US market index and discovered that a portfolio of shares, far from being diverse and spreading risk during a time of stock market slump, start behaving the same.

This new study has been carried out in collaboration with Dr. Dror Y. Kenett (Boston University, USA), Prof. H. Eugene Stanley (Boston University, USA), Prof. Dirk Helbing (ETH Zurich, Switzerland), and Prof. Eshel Ben-Jacob (Tel-Aviv University, Israel).

In their paper entitled "Quantifying the Behaviour of Stock Correlations Under Market Stress," Professor Preis reveals that the 'diversification effect' that protects a portfolio of shares through the vagaries of the stock market disappears when there is a general slump in the market.

Professor Preis believes this pattern can be used to anticipate 'diversification breakdown' in share portfolios and allow investors to steer away from a major crash by spreading their investments elsewhere or 'hedge' their money.

It could help traders avoid the major crashes that hit stock markets in 2008. Between September and December four of the five biggest daily falls in the Dow Jones hit the US stock exchange. It was part of one of the biggest stock market crashes and led to the economic recession most of the world is still suffering.

Professor Preis, who is associate professor of behavioural science and finance at Warwick Business School, which is part of The University of Warwick, said: "We analysed the daily closing prices of the 30 stocks forming the Dow Jones Industrial Average from March 15, 1939, to December 31, 2010. Our results also shed light on why correlation risks in mortgage bundles were underestimated at the beginning of the recent financial crisis."

The results of this study, published in *Scientific Reports*, provide crucial information on the behaviour of markets in times of stress.

"We found a striking result," said Dr Kenett. "The average correlation between these stocks increases at the same rate as market stress. Consequently the diversification effect, which should protect a portfolio, melts away in times of market losses, just when it would be needed most."

Their research has important applicative implications.

"We could use this to anticipate diversification breakdowns, which could guide the design of portfolios and contribute to the increased stability of the financial markets." says Professor Preis.

The German physicist, who founded Artemis Capital Asset Management, believes the data he has collected from 72 years of Dow Jones closing prices can be used to help portfolios steer clear of stock market crashes.

Professor Preis said: "When financial markets are suffering significant losses our findings could be used to anticipate the increasing lack of diversification in portfolios. This would enable a more accurate assessment of the risk of making losses."

More information: www.nature.com/srep/2012/12101 … /full/srep00752.html

Provided by University of Warwick