

# Fewer verbs and nouns in financial reporting could predict stock market bubble, study shows

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When the language used by financial analysts and reporters becomes increasingly similar the stock market may be overheated, say scientists.

After examining 18,000 online articles published by the Financial Times, The New York Times, and the BBC, [computer scientists](#) have discovered that the [verbs](#) and [nouns](#) used by financial commentators converge in a 'herd-like' fashion in the lead up to a stock market bubble. Immediately afterwards, the language disperses.

The findings presented at the International Joint Conference on [Artificial Intelligence](#), Barcelona, Spain, on Tuesday 19 July 2011, show that the trends in the use of words by financial journalists correlate closely with changes in the leading stock indices.

"Our analysis shows that trends in the use of words by financial journalists correlate closely with changes in the leading stock indices - the DJI, the NIKKEI-225, and FTSE-100," says Professor Mark Keane, Chair of Computer Science in University College Dublin, who was involved in the research.

"By plotting the distributions of words used in financial articles published online between 2006 and 2010 into a [computer model](#), we were able to identify what we call 'verb convergence' and 'noun convergence' – where the language used by financial journalists shows

converging agreement."

"Our study shows that reporters converge on the same language - 'stocks rose again', 'scaled new heights', or 'soared' - as their commentaries became more uniformly positive in the lead up to the 2007 crash."

"They also appear to refer to a smaller-than-usual set of market events – presumably because of an increased fixation on a small number of rapidly rising stocks," explains Professor Keane.

"Google predicted car sales from analyses of search queries, and the Amazon book recommender system captures consumer preferences by correlating book titles, so why not listen to the language used by financial commentators to see if it could help predict the stock market," says Aaron Gerow, who completed the research as part of his MSc in Computer Science at University College Dublin.

Provided by University College Dublin

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