Do current stock prices reflect a speculative frenzy? It?s a crucial question for anyone trying to preserve and grow their capital, but also a difficult one to answer. Martin Tarlie of Boston asset manager Grantham, Mayo, van Otterloo (GMO) has just published a short paper trying to quantify investor sentiment and whether it has driven prices to the stratosphere.

Many, including GMO?s James Montier, have commented on how strange this run-up in prices has been. Cab drivers aren?t eager to tell passengers about their latest technology stock purchases. Euphoria seems absent. But prices keep rising, making the rally seem cynical to Montier. And that has made it seem like there?s a disconnect between how investors feel and what they are doing ? and, therefore, also difficult to call current prices a frenzy.

But Tarlie?s Bubble Model tries to capture both the ?quantitative and anecdotal euphoric elements of a bubble.? Central to Tarlie?s thesis is the concept of ?mean aversion.? Most of the time when price trends and valuations become extended they snap back or ?mean revert? in some span of time. But, more rarely, they remain extended for long periods, and Tarlie calls this ?mean aversion.? This happens when speculators dominate markets.

Mean reversion speeds vary over time. But in a few instances mean reversion displays a negative speed, and this is Tarlie?s quantitative measure of euphoria. Between 1881 and today there have been five periods of explosive dynamics or mean aversion ? the late 1910s, 1929, the early 1980s, the late 1990s, and 2017-2018. Two of these periods coincide with bubbles ? 1929 and the late 1990s, and two others are characterized by low valuation ? the late 1910s and the early 1980s. Tarlie notes that in the latter two periods are characterized by an anti-bubble mood that is more ?dysphoric? than euphoric.

The fifth period ? from 2017 through late 2018 ? matches the other four quantitatively, though it lacks a sense of euphoria. Then in the fourth quarter of 2018, the trend reverts. Tarlie finds some substitutes for the cab drivers and shoe shine boys with stock tips of past generations. Instead of the stock market itself, Big Data, Artificial Intelligence, and Bitcoin were where animal spirits found outlets most recently. Moreover, in the last quarter of 2018 there is a ?dramatic change from an explosive mean averting phase to a strongly mean reverting? one. The scale and duration of the change in move resembles the market turns in 1929 and 1999.

The five incidents show that extreme changes stem from valuation extremes. In the late 1910s and in the early 1980s, stocks were unusually cheap. In 1929 and in 1999, they were unusually expensive. And when sentiment changes occur at moments of valuations extremes, prices can change rapidly.

The upshot of this analysis for investors now is that even though earnings are still strong, disappointments when expectations and valuations are so high can turn the market downward in a hurry. Changes in sentiment are also difficult to understand, which is why timing bubbles is so difficult. What matters isn?t the level of sentiment, but the degree of change, and that?s hard to predict. The fourth quarter (downward) move in stocks could be a head fake, Tarlie notes, but odds are that this is the beginning of the end of the bubble of 2017-2018. The bubble can always reflate, though, just as it did after Long Term Capital Management blew up in 1998, but Tarlie?s advice is ?to continue to own as little U.S. equity as career risk allows.?