

## Of herding, asset price bubbles and irrational investors ...

**As the crisis in the collateralised debt markets bit, many people in the media were quick to point to irrational herd behaviour among investors as its cause. Antonio Guarino of University College, London examines the concept and implications of investor 'herding' and its links to extreme events in financial markets.**

Markets fizz ... prices rise ... everyone seems happy with the same game ... Then, at some point, the music stops – sometimes quite suddenly – and the newspapers are filled with hindsight: the talk is of “bubbles”, and “irrational decision-making”, and of investors’ “dangerous herd instincts”.

But does investor herding actually happen? If it does, is it 'irrational'? Can arbitrageurs make money out of it? And does the concept of herding help to explain the formation of asset price bubbles?

When we make investment and financial transactions we are influenced by other people. Employees deciding whether to participate in a retirement plan are influenced by what their colleagues do. And word-of-mouth has been shown to be an important shaper of investment decisions for private and professional investors alike.

But are these examples of 'herding'? What exactly do we mean by the term?

Typically, when we talk about investors 'herding' we mean people whose private information inclines them to buy or sell, but who subsequently reverse their decision after observing the trend in the market.

Let's look first at whether such behaviour is necessarily *irrational*. Take a 'real world' example. Suppose you are staying overnight somewhere and you have to choose between two restaurants close to your hotel. Someone tells you restaurant A is better than restaurant B and you decide to eat there. But when you get near, you see that there are a few groups of people eating in restaurant B, while restaurant A is empty.

If you assume that the diners have chosen restaurant B on the basis of information or personal experience of their own, you would be acting quite rationally to change your mind and join them.

However, this example of 'rational herding' does not work well for financial markets – while people's decision to dine in a particular restaurant does not affect the price of its menu, the decision of traders to buy a particular stock *does* change its price. If the stock price increase is large enough to reflect the information embedded in the 'buy' orders, following the herd will not make sense.

In the real world, though, we know asset prices do *not* always change sufficiently in response to investor orders.

This is especially true in quote-driven markets, where, at certain times, traders conclude they understand the informational content of the order-flow better than the market-maker does (or, crudely put, they think they understand why the market is moving better than the market-maker). At these times, rational traders sometimes decide to follow the crowd – for example, buying an asset which, on the basis of their own information on its

fundamentals, they were originally planning to sell or hold. This is known as 'rational statistical herding'.

There are other situations in which herding may also be rational. Fund managers, for example, are paid on the basis of their ability – which is itself demonstrated by their performance over time.

If their choices vary widely, some of them will be seen to perform worse than others and these managers will be judged to be less able – which will have a correspondingly negative impact on their remuneration.

If, instead, the managers herd together and make roughly the same decisions, they will all perform well or all perform poorly. If they perform poorly, they may be able to make the case that they were unlucky. In any case, it will be impossible to determine which of them are less able on the basis of their performance. Given the tension between maximizing profits and risking reputational damage, they may well be better off following the market's first mover(s) rather than making their own independent decisions.

In this example, fund managers' herd behaviour may be perfectly rational. Under some conditions, and given certain incentive schemes, "it is better to fail conventionally than to succeed unconventionally," as John Maynard Keynes put it. A similar point was behind a once-common saying about executives making big IT purchase decisions: "No one gets fired for buying IBM".

This is not to conclude that all herding in financial markets is rational, of course, but simply to point out that we do not need to invoke irrationality to explain it. Even in an efficient market where everyone acts rationally, herd behaviour can arise.

### **Herding in real life**

Detecting firm evidence of herding is difficult. The fact two mutual funds make similar decisions, for instance, does not prove they are herding – they may simply be adjusting their portfolios in response to the same price movement.

Numerous studies have tried to control for these issues. On balance, what they show is that herding *does* exist among pension funds and mutual funds, but – contrary to the suspicions of the media – it does not seem to be enormously widespread.

Evidence of herding by institutional investors generally appears strongest for small stocks and 'high-growth' stocks, but recent research has also detected good evidence of rational statistical herding (by both private and institutional investors) in intraday trading specifically.

Do these examples of herding create opportunities for arbitrage?

When traders 'herd' on an asset, the result is mis-pricing. For example, if many traders buy a security because of herding, that security will have a high and increasing price that does not necessarily reflect its fundamental value.

However, such mispricing can only be temporary in the case of *rational statistical* herding, since when the price reaches a certain level, traders will realise it is not

worthwhile to herd any more, and the asset price will eventually come to rest at a level justified by its fundamentals. Meanwhile, the extent of the mispricing will be unknown until this has happened, making it difficult for arbitrageurs to make profits at the herders' expense.

Things are different in the case of institutional investors who herd for *reputational* reasons. Recent research has shown that institutional trading has strong predictive power – stocks that have been persistently sold by funds outperform stocks that have been persistently bought by the same funds in the two years following the transactions. This suggests they have been underpriced by herding, and arbitrage should in principle therefore be possible.

### **Herding and financial bubbles**

How does all this relate to asset price bubbles and other extreme market phenomena, such as severe financial crises?

The media frequently blame bubbles on irrational herding by investors – but in reality things are not quite so simple.

Financial crises cannot be explained by looking solely at economic fundamentals – they occur even when underlying economic fundamentals are sound.

Rational herd behaviour can provide part of the explanation. If many people start selling – perhaps because they have a mistaken view of the economic situation – rational traders may choose to do the same because they think market-makers are misinterpreting the sell orders and under-adjusting their pricing.

*Extreme* mispricing occurs in the case of financial bubbles. A bubble usually starts on the basis of genuinely good news (such as an increase in productivity in the case of the dotcom market expansion). Asset prices increase to take account of a genuine change in fundamentals, but at a certain point they go beyond the level the change itself justifies – though exactly when this happens only becomes apparent after the event.

### **A limited explanation**

Rational herders may be active in the early stages of bubbles, but rational herding is not a *complete* explanation for bubbles. In particular, it should be noted that when financial bubbles are actually happening many investors suspect they are in one. They buy, despite believing that the price is not justified by fundamentals, simply because they think they can sell again before the bubble bursts.

When this type of speculation operates alongside rational herding in financial bubbles, it produces deviations from economic fundamentals on a scale simply not seen in rational herding alone.

And, of course, *genuinely irrational* behaviour – either exuberance or fear – can exacerbate the extreme departures from economic fundamentals characteristic of asset price bubbles and financial crises.

*Antonio Guarino is a lecturer in Economics at University College, London.*