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Buttonwood

Technical failure

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Some numbers are not magic

PRACTICAL traders, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct mathematician. That is what Keynes might have said had he considered the faith placed by some investors in the work of Leonardo of Pisa, a 12th and 13th century number-cruncher.

Better known as Fibonacci, Leonardo produced the sequence formed by adding consecutive components of a series—1, 1, 2, 3, 5, 8 and so on. Numbers in this series crop up frequently in nature and the relationship between components tends towards 1.618, a figure known as the golden ratio in architecture and design.

If it works for plants (and appears in "The Da Vinci Code"), why shouldn't it work for financial markets? Some traders believe that markets will change trend when they reach, say, 61.8% of the previous high, or are 61.8% above their low.

Believers in Fibonacci numbers are part of a school known as technical analysis, or chartism, which believes the future movement of asset prices can be divined from past data. Some chartists follow patterns such as "head and shoulders" and "double tops"; others focus on moving averages; a third group believes markets move in pre-determined waves. The Fibonacci fans fall into this last set.

Buttonwood, who is daringly defying the tide of history by moving from Economist.com into the newspaper, has bad news for the numerologists. A new study* by Professor Roy Batchelor and Richard Ramyar of the Cass Business School, finds no evidence that Fibonacci numbers work in American stockmarkets. The academics looked at the Dow Jones Industrial Average over the period 1914-2002 and found no indication that trends reverse at the 61.8% level, or indeed at any predictable milestone.

This research may well fall on stony ground. Experience has taught Buttonwood that chartists defend their territory with an almost religious zeal. But their arguments are often anecdotal: "If technical analysis doesn't work, how come so-and-so is a multi-millionaire?". This "survivorship bias" ignores the many traders whose losses from using charts drive them out of the market.

Furthermore, the recommendations of technical analysts can be so hedged about with qualifications that they can validate almost any market outcome. As Professor Batchelor writes: "The root of the problem is the failure of technical analysts to specify their trading rules and report trading results in a scientifically acceptable way. Too often, rules are so vague and complex as to make replication impossible."

Fibonacci numbers at least have the virtue of creating a testable proposition; one that they appear to fail. But chartists will not be completely discouraged. A review of the academic literature** finds that, of 92 modern studies of technical analysis, 58 produced positive results (although the researchers say some of these studies may be flawed and that the best results occurred before the early 1990s).

If the efficient market theory is correct, technical analysis should not work at all; the prevailing market price should reflect all information, including past price movements. However, academic fashion has moved in favour of behavioural finance, which suggests that investors may not be completely rational and that their psychological biases could cause prices to deviate from their "correct" level.

Chartism probably holds most sway in the foreign-exchange market. Although currency markets are liquid and transparent, many participants (such as central banks) are not "profit-maximising". So it is possible that currency prices are not completely efficient. Furthermore, some technical predictions may be self-fulfilling; if everyone believes that the dollar will rebound at ¥100, they will buy as it approaches that level.

Technical analysts also make the perfectly fair argument that those who analyse markets on the basis of fundamentals (such as economic statistics or corporate profits) are no more successful. Nevertheless, Buttonwood urges extreme caution in relying on their claims.

All that talk of long waves is distinctly mystical and seems to take the deterministic view of history that human activity is subject to some pre-ordained pattern. Chartists fall prey to their own behavioural flaw, finding “confirmation” of patterns everywhere, as if they were reading clouds in their coffee futures.

Besides, technical analysis tends to increase trading activity, creating extra costs. Hedge funds may be able to rise above these costs; small investors will not. As illusionists often proclaim, don't try this at home.

*“Magic numbers in the Dow”

**“The Profitability of Technical Analysis: a review”, by Cheol-Ho Park and Scott H Irwin, University of Illinois