



## The unbearable lightness of finance

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### The discipline of financial economics was flummoxed by the recent market turmoil, which saw the comeuppance of two of its leading lights

"THOSE that can, do. Those that can't, teach." Robert Merton and Myron Scholes seemed to prove the old saying wrong. The two economists—the first at Harvard Business School, the second at Stanford University—shone with equal brilliance in the ivory towers of academia and in the real world of making money. Joint winners of the 1997 Nobel prize for economics, for their contributions to the theory of how to price financial assets, they were welcomed with rapturous applause both in academic forums and on bank trading-floors. Until, that is, the collapse in September of Long-Term Capital Management (LTCM), a hedge fund in which both professors were founding partners. Neither has been seen in public since.

Financial economists have long prided themselves on being of more practical use than other exponents of the dismal science. Certainly, the work of Messrs Merton and Scholes—along with that of three earlier Nobel prize-winners, Bill Sharpe, Merton Miller and Harry Markowitz—has transformed the way the world's financial markets operate. Financial economics has made the pricing of financial options and other derivatives a science, and greatly increased their usefulness. And it has helped the efficient shifting of risks from those who do not want to bear them to those who do. Little wonder that a doctorate in financial economics is these days considered a passport to a fabulously well-paid job in the finance industry.

Now, however, financial economics is in some disrepute and disarray. Its practitioners have long disagreed over whether the startling rise in share prices in recent years reflects a decline in the premium required by investors for the risk of holding shares, or—more simply—a bubble. And this autumn's turbulent events in the capital markets left financial-economic models looking, well, academic. The debate about share prices will run and run. The recent capital-market crunch demands more urgent attention.

Academic financial economists, unsurprisingly, still stand up for the science. René Stulz, who edits the profession's top research publication, the *Journal of Finance*, says, in a new book he is writing, that LTCM's only impact will be as "a nice case study". Most academics hint that LTCM's downfall had nothing to do with the financial models of the two Nobel laureates (an argument that rather irks those Wall Street firms persuaded to invest in the hedge fund precisely because it was using their models).

Their consensus view is that, at worst, the two Nobel winners were guilty of hubris. At best, they were the victims of a "perfect storm" in the markets: several extremely unusual events took place at once, with consequences that could not reasonably have been foreseen, and are unlikely ever to be repeated. And if even the cleverest academics lose money, doesn't that prove their point? The deepest insight of financial economics is that markets are fairly "efficient", meaning that you can earn high returns only by taking big risks. There really is no free lunch.

Yet there is no denying that the recent market turmoil confounded existing financial-economic models. The gaps between the yields on riskier bonds and newly issued Treasuries widened to levels they could not explain. In some markets, it was impossible to trade at any price. Another tenet of financial economics, that holding a diversified portfolio of assets reduces risk, was also challenged. In August and September, there was a sharp increase in the correlation between price movements in the world's main bond and stockmarkets. And there was a failure of the driving force of financial economics, arbitrage—supposed to ensure that when asset prices move away from their fundamental values, the potential for investors to make a profit will drive them back.

## The illiquidity trap

Each of these failures is a different facet of market illiquidity. Financial-economic models are based on the assumption that markets are liquid: trading is cheap and easy. So it is not surprising that they could not cope this autumn. According to Jim Angel, an economist at Georgetown University, understanding liquidity means understanding the markets' internal workings—and most financial economists have ignored them, because they have been able to generate powerful results regardless.

This willingness to ignore liquidity risks was not as negligent as it now seems. The market drought of the past few months really is unprecedented, even though there are some parallels with the 1987 stockmarket crash. Then, sudden illiquidity undermined hedging strategies known as "portfolio insurance", causing market panic.

Nor had economists—and, in particular, traders—ignored liquidity entirely. Options-pricing theorists have long recognised the need to put some price on liquidity risk—though nobody has come up with a particularly scientific way of doing so. A growing branch of financial economics known as "market micro-structure" concentrates on why spreads and prices vary across markets, and has found that liquidity is an important factor. However, this analysis has mostly concentrated on the impact of liquidity on individual trades, not on the circumstances in which many markets dry up at the same time for days on end. Only one academic paper has come close to explaining recent events. "The Limits of Arbitrage", by Andrei Shleifer and Rob Vishny, published in the March 1997 *Journal of Finance*, describes how, when the need for arbitrage is greatest, financial institutions are at their most reluctant to lend to would-be arbitrageurs. It almost reads like a prophecy of LTCM's collapse 18 months later.

But will financial economists now be able to construct models of the behaviour of liquidity? Andrew Lo, an economist at the Massachusetts Institute of Technology, reckons that they will, and that eventually the models will include the human and institutional factors that recent events have shown to be so crucial. However, another branch of economics known as "behavioural finance", which tries to use the insights of psychology to explain apparent market inefficiencies, has so far failed to produce a convincing theoretical model. Stanford's Bill Sharpe doubts that economists will get very far in modelling liquidity, because it relies too much on understanding the detailed workings of individual financial institutions.

Even so, financial economists are probably right to point out that recent events have challenged only one part of their discipline. Many insights—on matters ranging from how companies should finance themselves to how people should change their investment strategies over their lifetimes—remain as useful as ever. One failure does not undermine an impressive body of knowledge. As one financial economist recently responded to criticism from a fellow academic from a different department, "When the space shuttle exploded, did that make you doubt the value of engineering?" Perhaps he should also have asked, "Did you lose any money?"