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OPINION

When the sea dries up

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How Myron Scholes, a Nobel prize-winning economist, learned lessons about liquidity risk from the collapse of a hedge fund he helped to found

"THOSE who can, do; those who can't, teach." Few academic economists seem to offer better proof of this old adage than Myron Scholes. Not content with making his intellectual fortune as one-half of the Black-Scholes options-pricing theory, the economist decided to play the very financial markets that had been transformed by his theoretical insights. Which is how, one year ago, he found himself blamed for a crisis threatening the global financial system. Other co-founders of his hedge fund, Long-Term Capital Management (LTCM), were embarrassed by their troubles (notably, John Meriwether, a legendary securities trader); but Mr Scholes and Robert Merton, his fellow Nobel laureate and co-founder, became the fall-guys.

Mr Scholes this week marked the first anniversary of what he calls the "non-fault bankruptcy" of LTCM with a speech (to a conference organised by *The Economist*) in which he reflected on lessons learned. Cynics might ask what, if anything, there is to learn from somebody involved in such a debacle. But John Maynard Keynes, no less, did his best work after he nearly went bust through financial speculation in the 1920s.

Having left LTCM, Mr Scholes has turned, for obvious reasons, to an issue long neglected by economists: the supply and demand for liquidity in financial markets, and the risk that it might dry up. Liquidity refers to the ability of investors to exchange a financial asset, such as a bond or a share, for cash: the easier it is to switch into cash, the more liquid the asset.

In August 1998, after the Russian government had defaulted on its debts, liquidity suddenly evaporated from many financial markets, causing asset prices to plunge. LTCM tried to stave off disaster by selling assets as the value of its portfolio fell—but the lack of liquidity in the markets prevented it from selling enough. The value of its portfolio plummeted, until the Federal Reserve twisted the arms of a group of banks to mount a rescue.

The possibility that liquidity might disappear from a market, and so not be available when it is needed, is a big source of risk to an investor. Economic theory says that when investors take on extra risk, they ought to be rewarded with higher returns. That an investor can earn a large premium by using his capital to supply liquidity should, through market forces, ensure there is enough liquidity available. Why does this market solution sometimes fail?

Mr Scholes thinks part of the answer lies in the risk-management practices of large financial institutions, which "affect the supply of liquidity and therefore the required risk premium". The practices of even the best banks do not cope well with liquidity risk. "Value at risk" models, which calculate the maximum that an institution could lose in a normal day's trading work well in normal conditions, but not in extremes.

As for "stress-testing" a portfolio of assets—calculating what losses might be in some imagined crises—this relies on the creative abilities of the testers. They may impose "stress-loss limits" (if overall losses reach a certain size, risky positions are liquidated) and "stop-loss limits" (if the price

of an asset falls to a certain level, sell) and provide capital “cushions” (an amount of money put aside, just in case). But these are static measures ill-suited to crises, when prices fall so fast that, by the time the protection is activated, it is already too late: the financial equivalent of opening a parachute too close to the ground.

Far better, reckons Mr Scholes, if firms were to buy protection against liquidity risk in the market. Ideally, “liquidity options” would give financial institutions the right, but not the obligation, to sell their assets at a pre-agreed price. This would allow a risky portfolio to be liquidated at a predictable pace and cost should prices fall in response to a drying-up of liquidity. The price of these options would reflect the price of liquidity, and so would change in line with market conditions.

Slaking a thirst

So far, there is no established market in liquidity options. Until there is, Mr Scholes believes liquidity risk could be reduced by using “dynamic cushions” instead of static ones: ie, the “just-in-case” reserves would steadily be increased as asset values fall, by gradually selling assets. Now familiar with the ways of traders, Mr Scholes also suggests that their pay be based on the profits they make, but adjusted for the cost of buying protection against the liquidity risk they take. Otherwise traders will favour securities that are less liquid—which do well in good times but horribly in a crisis.

Even so, managing liquidity risk will be problematic so long as commercial and investment banks are the leading suppliers of liquidity. With their assets and liabilities valued at market prices, often daily, and their financial viability under constant scrutiny, they have an extremely short-term perspective. This can cause them to reduce the supply of liquidity sharply at times of crisis—as they did last summer, and as they are doing now in anticipation of Y2K problems. Moreover, because they have increasingly similar risk-management systems, they tend to withdraw their capital from the market at the same time—which has caused liquidity risk to soar.

By contrast, financial institutions such as insurers, hedge funds and pension funds have longer-term horizons, and so much smaller demand for liquidity at a moment’s notice. They could make money—and reduce the risk of liquidity crises—by providing liquidity to those who need it. Mr Scholes suggests they follow the example of America’s most-admired investor, Warren Buffett, who, he says, “tends to invest when the demand for liquidity is great, especially in distressed situations where his expected return from providing liquidity is the greatest”. Intriguingly, when LTCM collapsed, Mr Buffett offered to rescue it. Perhaps if he had been allowed to do so, Mr Scholes would not have returned to the ivory tower.