WHEN does legitimate speculation become illegal market manipulation? That question has been asked before of hedge funds, which have gained notoriety by placing big, one-way bets on markets and making large profits - and sometimes equally large losses - on them. Now the question is being asked with increasing insistence because some hedge funds have been using instruments which give them a huge incentive to manipulate prices in their own favour.

The instruments at the heart of the controversy are 'barrier options'. These are variants of standard financial options, which give their owners the right to buy or sell an underlying asset at an agreed price in future. They come in two types: a 'knock-in' option, which is activated only when the price of the instrument or market underlying the option reaches a certain level above or below an agreed range; and a 'knock-out' option, which becomes worthless if the price of the underlying asset or market reaches a pre-agreed point.

Barrier options can be useful hedging instruments. Imagine an American company that is worried that if the dollar falls below YEN 97 it will suffer an intolerable loss of earnings. However, if the dollar were to rise above YEN 102, the company would cease to worry about its foreign-exchange exposure. It could hedge this risk by purchasing a knock-out option that would protect it below YEN 97, but would expire worthless if the dollar reaches YEN 102.

The chief advantage of barrier options is that they are considerably cheaper than normal ones because the probability that they will be exercised is lower. This endears them to hedge funds, which thrive on achieving the biggest bang for their buck. When a barrier is breached in their favour, the funds make a hefty return on the relatively small amount of money they pay for knock-in or knock-out options in the first place.

The problem comes when prices move close to a barrier option's trigger point. The buyer of a knock-in option has a big incentive to push them above that point to ensure a pay-out; the option's seller has an equally big incentive to keep prices below that level. In the case of knock-out options, the incentives are reversed. The temptation to nudge prices can be hard to resist if the result will make a big difference to hedge funds' performance, and hence to the fees their managers earn.

In the case of a huge and liquid market such as foreign exchange, a single investor might judge it too risky and impractical to try moving prices. But if enough big investors have the same interests, they can certainly exert significant pressure on the market. And in less liquid markets, say options dealers, that pressure may be enough to move prices artificially. As one banker puts
it: 'You reach the stage where you are no longer hedging or even speculating, you are simply rigging the market.'

Emerging markets, which are relatively small and illiquid, are particularly vulnerable to this. In at least one case, such a market has already seen a fierce battle between a buyer and seller of knock-in options. In late 1994 and early this year, Merrill Lynch, an American investment bank, and a fund managed on behalf of Michael Steinhardt, a well-known hedge-fund manager, slugged it out in the market for Venezuelan Brady bonds (repackaged debt partially backed by American Treasury bonds).

The fund owned a knock-in option and was trying to push up prices by buying huge quantities of bonds. Merrill, which had sold the option, used all of its muscle to keep them below the point at which the option would have been triggered. This may explain why trading volumes in this otherwise obscure market soared: on December 9th, at the height of the battle, some $1.5 billion-worth of the almost $7 billion of outstanding Venezuelan Brady bonds changed hands, pushing up prices by 10%.

Merrill Lynch eventually won this titanic struggle, but at a considerable cost. The Securities and Exchange Commission, which can oversee the trading of foreign bonds by American investors, is said to be investigating the affair. Even if it finds that these options make it a little too tempting to manipulate the market, it will find it difficult to knock out knock-outs.