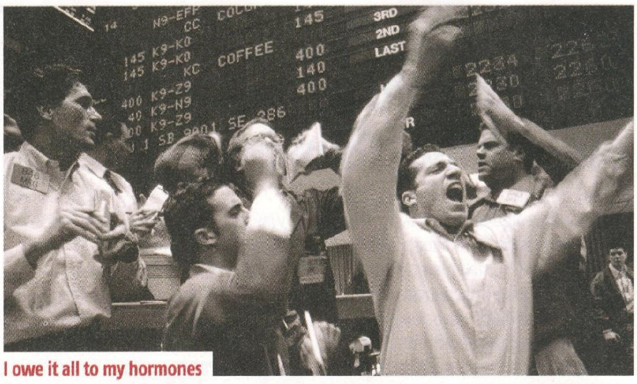
Winning traders are running on a testosterone high

THE behaviour of impetuous teenagers is often blamed on their hormones, but could these same chemicals drive the economy? The suggestion is that the movement of money in the markets correlates with traders' levels of testosterone, a hormone linked with aggression, and cortisol, the "stress hormone".

John Coates and Joe Herbert of the University of Cambridge monitored hormone swings in the saliva of 17 male traders on a London trading floor over eight days. The swings were compared with the sums a trader made or lost, and with market variations. When the traders made more money, their testosterone levels were higher, the researchers report in *Proceedings of the National Academy of Sciences* (DOI: 10.1073/pnas.0704025105). When markets were volatile, they had elevated levels of cortisol.

But which is the cause and which the effect? Further analysis showed that traders who started their days with extra testosterone made more money than those who didn't. One trader saw his testosterone levels soar by 74 per cent during a six-day winning streak. From experiments in animals, we know that testosterone produces a "winner effect", in which a victory raises levels of testosterone. This rise increases the chance of further victories. Raised testosterone has also been shown to accelerate decision making – a critical skill in stock trading. "A lot of trading is very short term," says Coates.

However, too much testosterone can lead to aggression and reckless decisions. And while elevated cortisol probably contributes to better risk



I owe it all to my hormones

management in volatile situations, over the long term it can increase the risk of cardiovascular disease and arthritis. "It also leads to shrinkage of brain regions associated with decision making and factual memory," says Bruce McEwen of Rockefeller University, New York. It also enlarges regions associated with anxiety.

That can trigger "learned helplessness", a sense of futility in risky situations. This could impede recovery from the current slowdown. "What concerns me is not how far down the markets go, but for how long," says Coates, a former trader. "These traders just slump down, and then don't respond to positive price indicators like interest rate cuts, he says." Jason Palmer