lash designed to sow fear about a disruptive technology. But more moderate crypto-proponents concede that regulation can help. Albert Wenger of Union Square Ventures, a venture-capital firm, says that rules making it easier for investors to distinguish between good and bad projects will take time to design, but should ultimately support the market. And greater regulatory certainty could convince even conservative institutional investors to dive in, argues Matthew Goetz of BlockTower Capital, an investment firm. After all, concerns about exchanges and scams are hardly new. Bitcoin weathered a fall of 85% between 2013 and 2015 after Mt Gox, then the largest virtual-currency exchange, was hacked and collapsed.

The price falls, however, may have scared off some investors. Sarit Markovich of Northwestern University's Kellogg School of Management says that many retail investors bought crypto-currencies not out of rational calculations but for fear of missing out. They have learned they are not a one-way bet. That stockmarkets and crypto-currencies fell in tandem on February 5th may also have scotched another notion: that bitcoin, a sort of "digital gold", would benefit from a flight to safety. ■

Insider trading

In the know

NEW YORK

The well-connected really do fare better—even during a financial crisis

INSIDER-TRADING prosecutions have netted plenty of small fry. But many grumble that the big fish swim off unharmed. That nagging fear has some new academic backing, from three studies. One argues that well-connected insiders profited even from the financial crisis.* The others go further still, suggesting the entire share-trading system is rigged.**

What is known about insider trading tends to come from prosecutions. But these require fortuitous tip-offs and extensive, expensive investigations, involving the examination of complex evidence from phone calls, e-mails or informants wired with recorders. The resulting haze of numbers may befuddle a jury unless they are leavened with a few spicy details—exotic code words, say, or (even better) suitcases filled with cash.

The papers make imaginative use of pattern analysis from data to find that insider trading is probably pervasive. The approach reflects a new way of analysing conduct in the financial markets. It also raises questions about how to treat behaviour if it is systemic rather than limited to the occasional rogue trader.

The first paper starts from the private meetings American government officials held during the crisis with financial institutions. Not made public at the time were critical details about what came to be called the Troubled Asset Relief Programme (TARP), notably how much money would be involved and how it would be allocated. This mattered hugely. The very survival of some institutions was at stake; in the end, hundreds of billions of dollars were pledged. Knowing the structure and scope of the bail-out in advance would have been a vitally important piece of information for investors during this period.

The paper examines conduct at 497 financial institutions between 2005 and 2011, paying particular attention to individuals who had previously worked in the federal government, in institutions including the Federal Reserve. In the two years prior to the TARP, these people's trading gave no evidence of unusual insight. But in the nine months after the TARP was announced, they achieved particularly good results. The paper concludes that "politically connected insiders had a significant information advantage during the crisis and traded to exploit this advantage."

The other papers use data from 1999 to 2014 from Abel Noser, a firm used by institutional investors to track trading transaction costs. The data covered 300 brokers but the papers focus on the 30 biggest, through which 80-85% of the trading volume flowed. They find evidence that large investors tend to trade more in periods ahead of important announcements, say, which is hard to explain unless they have access to unusually good information.

They could acquire such information in several ways. The most innocent is that brokers "spread the news" of a particular client's desire to buy or sell large amounts of shares in order to create a market, much as an auction house might do for a painting. But it is also possible, the papers suggest, that they give this information to favoured clients to boost their own business. Strengthening this argument is the finding that large asset managers which use their own affiliated brokers do not lose out.

Large institutions can be both beneficiaries and victims of this sort of information leakage. But in general they are net gainers. The real losers, the papers conclude, are retail customers and smaller asset managers. Common to all the papers is the recognition that the public markets are, as conspiracy theorists have long argued, not truly public at all. Changing the law to fix that may not even be feasible. But at least, in large-scale data-crunching, a new type of corporate sleuth is on the case. ■

The joy of knowledge

* "Political connections and the informativeness of insider trades", by Alan D. Jagolinzer and others, Rock Centre for Corporate Governance at Stanford University, Working Paper 222.
** "Brokers and order-flow leakage: evidence from fire sales", by Andrea Barbon and others, NBER Working Paper 24089, December 2017; and "The relevance of broker networks for information diffusion in the stockmarket", by Marco Di Maggio and others, NBER Working Paper 23522, June 2017.