

World's largest study to date into computer-based financial trading reveals beneficial effects but warns of systemic risk

November 5 2012



A new Government research project, undertaken by an international team of researchers including experts from the University of Bristol, into the advantages and risks of computer-based trading in financial markets has shown it to have beneficial effects but warned of the risks of greater instability.

[Technological advances](#) have meant that computer-based trading, which enable [computer algorithms](#)—[automated systems](#) for buying and selling securities—rather than humans to drive high-speed [stock trades](#), now represent the majority of quotes and trades in financial markets.

The two-year study, involving experts from more than 20 countries,

aimed to generate evidence on the links between computer-based trading and liquidity, volatility, the likelihood of market crashes and market manipulation.

Evidence from the report, described by the [New York Times](#) as 'the most comprehensive effort to date to understand the computerised trading firms that have come to dominate the financial markets and generate anxiety among regulators and investors', suggest that computer-based trading has several [beneficial effects](#) on markets.

Results show it helps to maintain liquidity, reduce transaction costs and increase the efficiency of market prices but finds no evidence to suggest it has led to increased volatility or abuse of the market. However, it warns that computer-based trading may lead to episodes of illiquidity and instability, including 'Flash Crashes'. The study also presents a cost and benefit analysis of each of the tools available to policy makers to curb high-frequency trading (HFT).

Professor Sir John Beddington, the Government's Chief Scientific Adviser, commenting on the findings, said: "Well-functioning financial markets are vital for everyone. They support business and growth across the world and provide important services for investors. This research provides evidence to policy-makers concerning the effect of HFT on financial markets, looking out to 2022.

"There has been a relative lack of evidence and analysis to inform new regulations designed to increase market competition and protect consumers, and so this report provides clear advice on what regulatory measures might be most effective in addressing those concerns in the shorter term, while preserving the benefits that this technology may bring."

Dr Sylvain Friederich, Senior Lecturer in the University's School of

Economics, Finance and Management, one of the writers of the project's final report (the key document for policy purposes) also contributed several studies to the 'evidence base' feeding into the document. Three studies, written with Professor Richard Payne of the Cass Business School, focus on the effect of high-frequency trading on liquidity, the likelihood of market abuse, and evaluate order-to-trade ratios as a policy tool. A fourth study with Dr Mike Yearworth of the University of Bristol's System Centre draws out a 'systems map' of [financial markets](#) for policy makers to analyse interactions and feedback effects between players.

More information: The full report 'The Future of Computer Trading in Financial Markets – An International Perspective' and evidence base is available at www.bis.gov.uk/foresight/our-work-reports-and-publications.

Provided by University of Bristol

Citation: World's largest study to date into computer-based financial trading reveals beneficial effects but warns of systemic risk (2012, November 5) retrieved 26 April 2024 from <https://phys.org/news/2012-11-world-largest-date-computer-based-financial.html>

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