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Too Fast to Fail?: The Perils of Algorithmic Trading in the Indian Markets

Since 2011, algo trading has been swiftly gaining ground in the Indian stock and commodity markets. Algorithmic trading is all the rage in India now but the key questions that are rarely asked: To what extent algo trading be allowed in the Indian commodity futures markets? Do we have a system of checks and balances in place to control dysfunctional algorithms and minimise the possibilities of any flash crash?

Algorithmic trading is based on a technology-driven pre-programmed mathematical model that allows execution of orders at a very high speed (without human intervention) to benefit from the smallest movement in the prices of commodities, stocks and currencies. The buy or sell orders are executed by computers not in seconds, but in microseconds.

In this fully-automated process, no human intervention is needed and human emotions play no part in the trading. The high frequency trading (HFT) is a genre of algorithmic trading. The HFT firms invest heavily in technological infrastructure (such as computer and communication systems) and hire highly skilled professionals.

The exact market share of algo trading in commodity futures market is not publicly known but market analysts estimate that around 20 percent of daily volumes at MCX and 12 percent at NCDEX

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are generated by algo trading. In the Indian equity markets, the share of algo trading is higher - 24 percent of cash segment turnover and about 40 percent of equity derivatives markets.

Given the short-term nature of trading strategies, algo traders prefer to locate their servers next to the exchange servers to benefit from the advantage of valuable microseconds. This practice, called co-location, offers few traders faster access to the exchange server than other market participants and they can exploit price difference between equities and commodities traded on different markets much quicker.

The proponents of algo trading claim that it provides liquidity to the market and also contribute higher revenues to the exchanges due to increase in trading volumes. In the aftermath of global financial crisis, however, serious questions have been raised whether algo and HFT traders supply liquidity at times of market stress.

Unfair Advantage to Big Institutional Brokers

Even though technically legal, algo trading gives unfair advantage to big market players who can out-trade small traders because they can afford expensive technology and hire highly skilled professionals. Thus, large institutional brokers gain because of their strong financial strength enables them to make investments in expensive technology and hire skilled professionals.

Besides, high trading volumes generated by HFT firms can move the market away from fundamental value and thereby weaken the price discovery process. The market regulators are also concerned that fast and automatic operation of algorithms by HFT firms may increase price volatility in both normal and turbulent market conditions.

Of late, algo trading and HFT firms have come under regulatory scanner due to frequent flash crashes in the financial markets. A report by the International Organization of Securities Commissions (IOSCO), an international body of securities regulators, concluded that the use of algorithms and HFT technology was a contributing factor in the flash crash event of May 6, 2010 when the Dow Jones Industrial Average plunged about 1000 points after a large mutual fund sold 75,000 shares of stock worth about \$4.1 billion via an automated execution algorithm.¹ “The events of May 6 have clearly shown that, in a context of deteriorating market conditions a shock in one market can trigger destabilizing effects on the liquidity and price formation processes of related markets. This clearly threatens both the integrity and the efficiency of the markets,”² states the IOSCO report. The flash crash intensified the liquidity crisis, thereby causing a massive systemic disruption in the US financial markets.

A report by joint CFTC-SEC Advisory Committee also acknowledged: “The events of May 6 demonstrated that even in a single market setting such as a futures market liquidity problems can arise from unexpected imbalances in the book of orders. Given the speed of order placement and cancellation, these imbalances can arise quickly, and their impact can be far-reaching.”³

The Flash Crash of 2012

Algorithmic trading creates its own set of problems. As witnessed during Mahurat trading in October 2012, a rogue program can place orders continuously and thereby create a potential systemic crisis. The problem gets further compounded in the commodity futures markets where traders deploy higher leverage than in stock markets.

In India, a flash crash sent the National Stock Exchange’s index into a tailspin on October 5, 2012. The NSE’s Nifty plunged nearly 900 points (15.5 percent) due to ‘erroneous trades’ executed via algorithms by an institutional investor (Emkay Global Financial). The flash crash triggered stop-losses and thereby created another spiral. Many investors were taken by surprise by the sudden fall in the market prices. As per SEBI’s rules, circuit breakers were supposed to be triggered at a 10 percent rise or fall in the index. But the trading on NSE only came to a halt when the index went down 15.5 percent.

These recent incidents of flash crash in the financial markets show that algo trading, if misused by design or default, could generate significant systemic problems. In addition, algos can suck out liquidity from the market by generating a large number of orders which do not get converted into trades. It has been widely observed in the Indian and global markets that huge orders at fast speeds are placed only to manipulate prices and influence market behavior.

To prevent these malpractices, FC and commodity exchanges should penalise traders for placing huge orders that did not result into trades. The regulatory agencies and exchanges should take strict action against rogue traders and market surveillance should detect and debar misbehaving automated trades.

The Ban on Algo Trading

The FMC had banned algo trading in micro and mini contracts from January 1, 2013 onwards. The micro and mini contracts (with small trading lots and tick size) were primarily launched to benefit small traders who could not order large-size contracts. But the FMC found that only large traders availed the benefit of algo trading as almost 95 per cent of the trading volume in such contracts was generated through bulk orders executed through automatic trading. Consequently, the FMC banned the algorithmic trading in such contracts.

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It is surprising to note that after a year of suspension, the FMC again allowed algo trading in micro and mini contracts in January 2014 with new regulatory guidelines such as limit of 20 orders per second by a user, a daily order-to-trade ratio with economic disincentive, and commodities exchanges would submit a monthly report on algorithmic trading.

The new regulatory guidelines for algo trading would only be meaningful if the FMC and commodity exchanges have the wherewithal and preparedness to ensure that these would be followed in letter and spirit. Given the fact that algo trading could potentially destabilize futures markets, the FMC should reconsider the use of such trading strategies which act as a barrier to fair and equitable trading.

— Kavaljit Singh

Notes and References

1. IOSCO, *Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency*, Technical Committee Consultation Report CR02-11, July 2011, p. 41.
2. Ibid, p. 12.
3. SEC-CFTC, *Recommendations Regarding Regulatory Responses to the Market Events of May 6, 2010*, Joint Advisory Committee on Emerging Regulatory Issues, February 2011, p. 13.

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