

# It's time for regulatory algos

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Ever since algorithmic trading gained momentum, market regulators have been contemplating upgradation of their regulatory skills to tame the new animal on the street. Regulators such as SEBI became more concerned when even 'small investors' started algo trading through third party algos.

Accelerated changes in technology is making regulators extremely nervous. Central banks' concern with cryptos and other digital currencies is well-known. Fintech revolution is fundamentally changing not only products and processes in the financial sector; it is also making things more challenging for financial sector regulators.

## Efficacy of text-based norms

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Regulators use regulations to mandate discipline for the regulated entities, activities, markets and transactions. Regulations are texts, usually written in English; generally using traditional legal styles. Often, they are open to varying interpretation, depending on the issue, the person and the context.

While regulations are often static or slow-moving, the lightning speed of technological changes and new business innovations at the regulatory boundaries are changing market practices rapidly. Questions are being raised about the ability of regulators to regulate the increasingly hi-tech and at times 'decentralised' mode of products, services and delivery innovations in the financial sector.

After algo trading, app-based lending and other digital financial services, crypto currencies etc. are probably only the beginning of a new massive wave of technological innovation taking over the full financial sector where traditional organisation like banks, securities firms etc. may suddenly find themselves being transformed into 'giant insects' lying helplessly on their back; a sort of financial sector metamorphosis a la Franz Kafka.

Given the rapid pace of technological changes taking place in the financial sector, one of the questions being posed in any discourse of regulatory models is whether regulators operating in the conventional mode; with human employees and text-based rules and regulations, will be effective in discharging their regulatory functions.

For example, how does the regulator call out, say an insider trading activity using algos, within a reasonable time? Will the conduct of regulators be able to identify insider trading, fraudulent and unfair trades or other violation of securities laws within reasonable time and punish the offenders given the massive volume of data generated by high frequency trading? One should also recall that the deterrence objective of punishment is very important in signalling.

Therefore, taking timely action against violators is imperative in effectively regulating the market and in maintaining market integrity.

## Upgrading regulatory response

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The general response to these and other regulatory capacity/efficiency questions has been in terms of strengthening the human resources of regulators and by using some basic technology based inputs such as call records data, call location etc. by their investigation teams.

They also use technology-based approach to market monitoring and surveillance. In a world of slow technological changes (tech evolution) probably such approaches would have been sufficient.

However, in the present world of leap-frogging, mind-blowing technological revolution the efficacy of such a gradual approach is in serious doubt. In fact, fintech revolution has taken the hitherto risk factors into the realm of complete uncertainty, which as conventional wisdom tells, cannot be regulated.

Obviously the regulators need to up their ante; fast and in a very unconventional manner, if they have to effectively perform their assigned tasks.

## **The right tool**

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Warfare technology from ancient times onwards have taught us that for every weapon being deployed by your opponent, you have to use an appropriate counter weapon. In order to catch a Ferrari driving thief the police also need at least a similar car! Regulators also need to adopt such a strategy if they want to remain relevant in terms of the objectives they have been founded for.

Going by this logic it is perhaps time that regulators convert the traditional weapons in their armoury into sophisticated algorithms. Such algos should move in pace, if not faster, with the algos and apps being unleashed by the market forces.

Regulators have started using algos in a limited way; particularly in market monitoring and surveillance. However, for developing full-fledged regulatory algos it is important that the text of the regulations is made precise by limiting the possibility of varying interpretations. It is also important that trading or other operational data are logically arranged to facilitate writing the algos effectively so as to capture the trigger points of violations effectively.

Once the regulatory text achieves an appropriate degree of precision and data are organised as needed by the experts, technical experts can take over the task of converting the language-based regulations into algorithms.

Regulatory algo is a possibility that expert algo writers must be aware of. A priori, also it is quite conceivable that if algos can be developed for trading, lending and other financial services, algos can also be developed for regulating financial sector operations. Moreover, as reported, China has been even using AI based 'judges' [Robot Judges] since 2017 for dealing with the ever-increasing litigations.

There appears to be no other effective way in regulating the sophisticated, new age market players and other financial sector operators except by 'front-running' them using appropriate technology as the counter-weapon.

Today it may be regulatory algos, tomorrow it could well be another sophisticated tech-weapon as faster and faster tech-based applications and operations in the financial sector would unfold at break-neck speed from the Metaverse and beyond as technology and humans riding it travel faster and faster to new frontiers of innovations. Regulators need to quickly cover a lot of miles, to remain relevant in the era of tech-revolution.

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