Consultation paper

Algorithmic Trading by Retail Investors

1. Objective

1.1. The objective of this paper is to seek comments/views from various stakeholders including market intermediaries and the public on algorithmic trading being done by retail investors including use of API access and automation of trades using the same.

2. Background

2.1. SEBI, from time to time, has provided broad guidelines on algorithmic trading according to which any order that is generated using automated execution logic shall be known as **Algorithmic Trading**. Generally, the features of algorithmic trading (hereafter referred as 'algo trading') include using a defined set of instructions in the form of algos to generate trading signals and placing orders.

2.1.1. The algo trading system automatically monitors the live stock prices and initiates an order when the given criteria are met.

2.1.2. This frees the trader from having to monitor live stock prices and initiate manual order placement.

3. Extant Provisions

The extant provisions available for the use of algos for trading are as follows:

3.1. The facility of algo trading shall be provided by the stock broker after obtaining permission of the stock exchange.

3.2. All algo orders shall necessarily be routed through broker servers located in India and the stock exchange should have appropriate risk controls mechanism to address the risk emanating from algo orders.

3.3. All algo orders shall be tagged with a unique identifier provided by the stock exchange in order to establish audit trail and the stock broker shall seek approval from the Exchange for any modification or change to the approved algos or systems used for algos.

3.4. The stock exchange shall have arrangements, procedures and system capability to manage the load on their systems in such a manner so as to achieve consistent response time to all stock brokers.

3.5. The stock broker, desirous of placing orders generated using algos, shall satisfy the Exchange with regard to implementation of minimum levels of risk controls at its end such as price check, quantity check, order value check, cumulative open order value check, automated execution check etc.

3.6. Stock broker shall ensure that the price quoted by the order shall not violate the price bands defined by the stock exchange.

3.7. Stock exchange shall identify the dysfunctional algos (i.e. algos leading to loop or runaway situation) and take suitable measures, including advising the broker, to shut down such algos and remove any outstanding orders in the system that have emanated from such dysfunctional algos.

3.8. Further, in exigency, the stock exchange should be in a position to shut down the broker's terminal.

3.9. Stock Exchanges have put in place processes for algos where brokers file necessary documentation including system audit reports of mandatory pre trade risk checks, controls and testing before an algo is deployed for trading. Brokers are required to identify algo orders (including those provided by Computer to Computer Link (CTCL) vendors) and have to tag their algo orders appropriately with unique 'Algo ID' as assigned to the algo by the Exchange.

4. Algo Trading in India

4.1. If a broker offers a discretionary algo (one that decides when to buy or sell based on a strategy) that is hosted and managed by the broker, the algo would need approval of the Exchange. This is applicable if the algo is used by the broker for their own proprietary trading (prop trading) or if it is offered to investors.

4.2. When the broker offers such an algo, the algo or the program runs on the broker's systems and not on the investors system. Whenever the algo generates a signal, an order automatically gets fired on the investor's account with no human involvement from either the broker or the investor.

4.3. Many brokers in India have started providing Application Programming Interface (API) access to their clients which establishes an online connection between a data provider (i.e., Stock Broker) and an end-user (i.e., Client).

4.4. API access enables the investors to use a third-party application that suits their feature needs or investors who have technological capabilities to build their own front-end features. These third-party applications help an investor analyze market data or back-test a trading or investment strategy.

4.5. It is observed that these APIs are being used by the investors for automating their trades. Presently, it is observed that though the broker can identify the orders emanating from an API, they are unable to differentiate between an algo and non-algo order emanating from an API.

4.6. The advent of platforms that are selling algorithmic strategies according to the needs of the investor that can be used off the shelf or applications which are allowing investors to create algo strategies using web-based strategy builder are acting as catalyst to this automation of trades being done by the investors.

4.7. While the services of these third-party applications/algo providers/vendors are being increasingly used by investors (especially retail investors), it is observed that such algos are being deployed without taking requisite approvals from the Exchanges as per the extant provisions.

4.8. Currently, Exchanges are providing approval for the algo submitted by the broker. However, for the algos deployed by retail investors using APIs, neither Exchanges nor brokers are able to identify if the particular trade emanating from API link is an algo or a non-algo trade.

4.9. This kind of unregulated/unapproved algos pose a risk to the market and can be mis-used for systematic market manipulation as well as to lure the retail investors by guaranteeing them higher returns. The potential loss in case of failed algo strategy is huge for retail investor. Since these third-party algo providers/vendors are unregulated, there is also no investor grievance redressal mechanism in place.

4.10. Hence, in order to make the algo trading safe for retail investors and also to prevent market manipulations, it is felt that there is a need to create a regulatory framework for such algo trading.

5. <u>SEBI Working Group</u>

5.1. SEBI constituted an internal working group which deliberated on the issue of unregulated algos being used by investors especially retail investors and ways to prevent the same. The working group held meetings with various market participants and based on deliberations, the working group submitted their recommendations which are elaborated in the subsequent paragraphs.

6. <u>Proposed Framework</u>

The following framework may be considered for algo trading done by retail investors including use of API access and automation of trades:

6.1. All orders emanating from an API should be treated as an algo order and be subject to control by stock broker and the APIs to carry out Algo trading should be tagged with the unique algo ID provided by the Stock Exchange granting approval for the algo.

6.2. Stock broker needs to take approval of all algos from the Exchange. Each Algo strategy, whether used by broker or client, has to be approved by Exchange and as is the current practice, each algo strategy has to be certified by Certified Information Systems Auditor (CISA)/ Diploma in Information System Audit (DISA) auditors.

6.3. Stock Exchanges have to develop a system to ensure that only those algos which are approved by the Exchange and having unique algo ID provided by the Exchange are being deployed. Brokers shall also deploy suitable technological tools to ensure that appropriate checks are in place to prevent unauthorized altering/tweaking of algos.

6.4. All algos developed by any entity have to run on the servers of broker wherein the broker has control of client orders, order confirmations, margin information etc.

6.5. Stock brokers need to have adequate checks in place so that the algo performs in a controlled manner.

6.6. Stock brokers can either provide in-house algo strategies developed by an approved vendor or outsource the services of third party algo provider/vendor by entering into a formal agreement with each third party algo provider/vendor whose services are being availed by the broker.

6.7. Stock broker is responsible for all algos emanating from its APIs and redressal of any investor disputes.

6.8. Obligations of stock broker, investor and third party algo provider/vendor need to be separately defined. Stock broker is responsible for assessing suitability of investor prior to offering algo facility. No recognition shall be given by the Exchange to the third party algo provider/vendor creating the algo.

6.9. Stock brokers shall ensure that only those third party algo provider/vendor, with whom broker had entered into an agreement with, shall use the name of the broker as part of their testimonial, provided Exchange prescribed advertisement guidelines are met.

6.10. Two factor authentication should be built in every such system which provides access to an investor for any API/algo trade. The software to be used to create the strategies should be approved by the Exchange.

6.11. Stock brokers shall include a specific report on algorithm checks implemented by them as a part of annual system audit report submitted to the Exchanges and format for the same shall be prescribed by the Exchanges.

7. Third party algo providers/vendors as Investment Advisor/Research Analyst

7.1. There needs to be a clarity on whether the services offered by the third party algo providers/vendors are in the nature of investment advisory services as the nature of their services includes providing strategies to the investors based on research and analysis done by them.

7.2. Since there is limited understanding with respect to the nature of services provided by various algo providers, brokers may obtain from their clients, details of nature and type of services taken from algo providers along with a confirmation as to whether the said services are in the nature of investment advisory services.

7.3. Such details obtained by broker would help in formulation of policy framework, if felt necessary, regarding third party algo providers in future.

8. Public Comments

8.1. In order to take into consideration views of stakeholders, public comments are solicited on the proposal.

8.2. Comments may be sent by e-mail or through post. While sending comments through e-mail, kindly mention the subject as "**Algorithmic Trading by Retail Investors**."

8.3. Comments may please be emailed to sushmau@sebi.gov.in or send by post at the following address latest by January 15, 2022.

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