



## Algorithmic Trading - The Financial Super Car of Next Generation

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### Abstract

This piece of write up discusses about the present state of capital markets of India which are over influenced by the use of algorithmic and high frequency trading in secondary market. These may be necessary to provide enough liquidity and striking the balance, but India is lagging behind in terms of real capital formation as against mere trading of securities as futures & options or otherwise. Further, it also discusses economic in-equality under Gini Co-efficient of India as provided by IMF, pressing us to address the fundamental issues of our country's capital markets for ensuring stability and growth in the future.

**Key words:** Algorithm Trading, Capital Markets, Capital Formation, Liquidity, Gini Coefficient

**JEL Classification:** O16

**Paper Classification:** Research Paper

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*“Speed alone cannot be a mark of success, unless backed by the character of good intentions”*

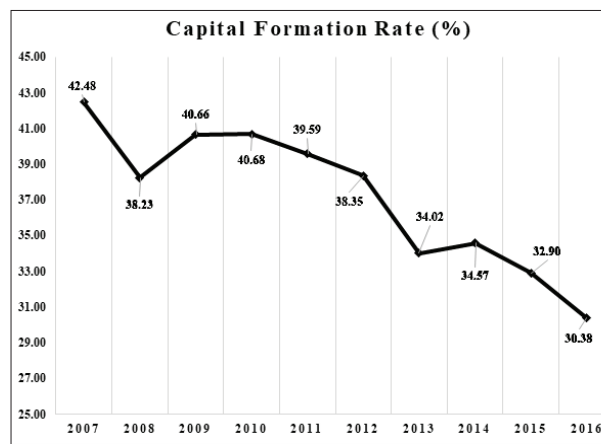
### Introduction

The imperative need for speed cannot be denied in any segment. Finance being no exception, the markets have taken leaps and bounds on adding speed to the concepts. The concept of a super car might bring a thrill and a spark to the eyes, but to run the full potentials of this super car, one needs super infrastructure, super support system and a well-controlled regulatory environment. Algorithmic Trading and its different facets have already put forth the potentials, and resultant dominating volumes are indicating the acceptance of the concept. What is not convincing, is the concentration of trade in the hands of few institutions and high net worth investors. If a market practice is expected to have constructive outcomes, it should be widely accepted and not restricted to few hands. The regulators and exchanges have a regulatory and moral responsibility to penetrate the concept to the vast spectrum of traders. Traders and investors who are not updated with facets of Algorithmic Trading would soon find the market potentials declining for them, leading to an exit. This could be hazardous over a long term as the concentration of wealth would build-up in hands of few, leading to the widening of income disparity levels. A mature market would seek the interest of all and hence any activity that leads to disparity of income and erosion of confidence should be addressed with utmost importance.

## Algorithmic Trading and Capital Formation

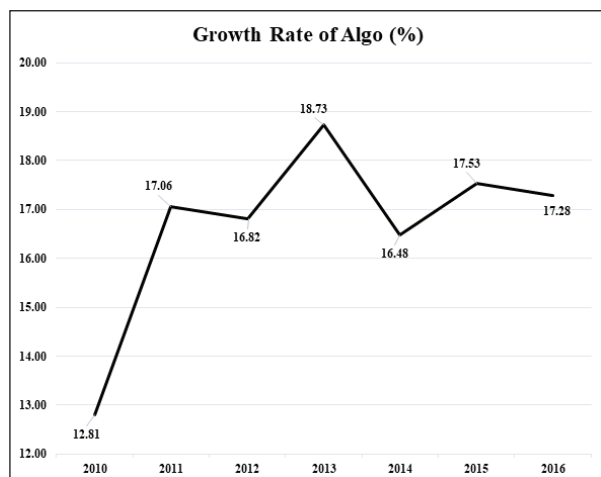
Algorithmic Trading turns into a blessing in disguise as it facilitates in minimising the mispricing of the assets across the market, hence reduces noise and volatility. Moreover, it also adds liquidity over a short term by increasing the turnaround time of a trade. Amidst all these advantages, what Algorithm Trading does not address is capital formation, the main objective of capital market in any economy. It should not be reiterated that capital formation is the key driving force for any economic growth. Capital markets are created to facilitate the mobilization of savings of all surplus economic units and convert them into capital assets (long term assets). Algorithmic Trading does not facilitate capital formation as the trades are driven for a very short span. India’s capital formation rate has been consistently declining at a CAGR of -4.10% in last 9 years. Whereas the volumes in Algorithmic Trading in last 7 years has been growing at the rate of 5.11%.

**Figure 1: Capital Formation Rate of India from 2008 to 2016.**



Source: World Bank

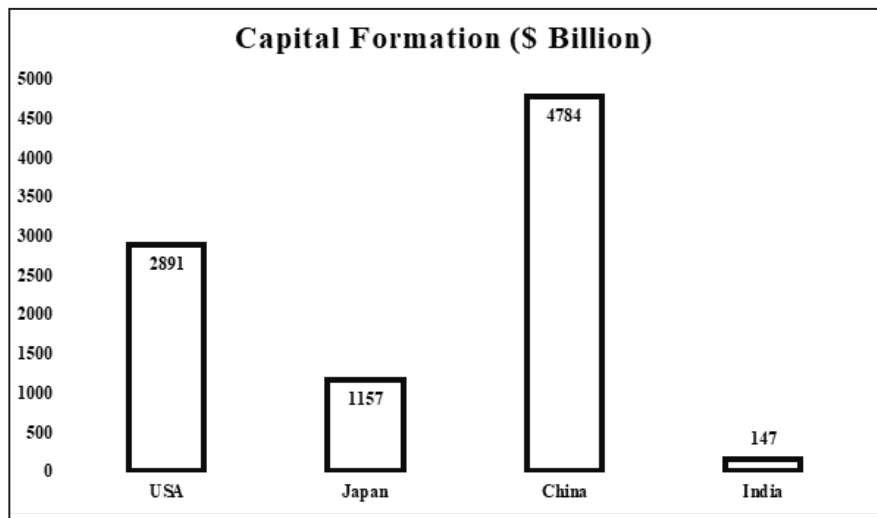
**Figure 2: Growth of Algorithm Trading in India from 2010 to 2016.**



Source: SEBI

In the light of the above-stated facts, Algorithmic Trading should be acceptable in the market but in controlled numbers. Moreover, the amount of money diverted to capital market should be used for both the purposes, capital formation and liquidity enhancement. The proposers and supporters of Algorithm Trading in India are just looking at the market volumes as indicators of growth and success. The statistics in support say that developed countries like USA (having close to 70% of the total trade coming from Algo Trade) as compared to India (having close to 46% of the total trade coming from Algo Trade). Comparing the Algorithm volumes of India with markets like USA and Japan would not be appropriate as these developed markets already have a very high gross capital formation, whereas India’s gross capital formation in absolute scale is not even comparable.

**Figure 3: Comparative Analysis of the Gross Capital Formation of India vis-à-vis other Countries.**



Source: Trading Economics

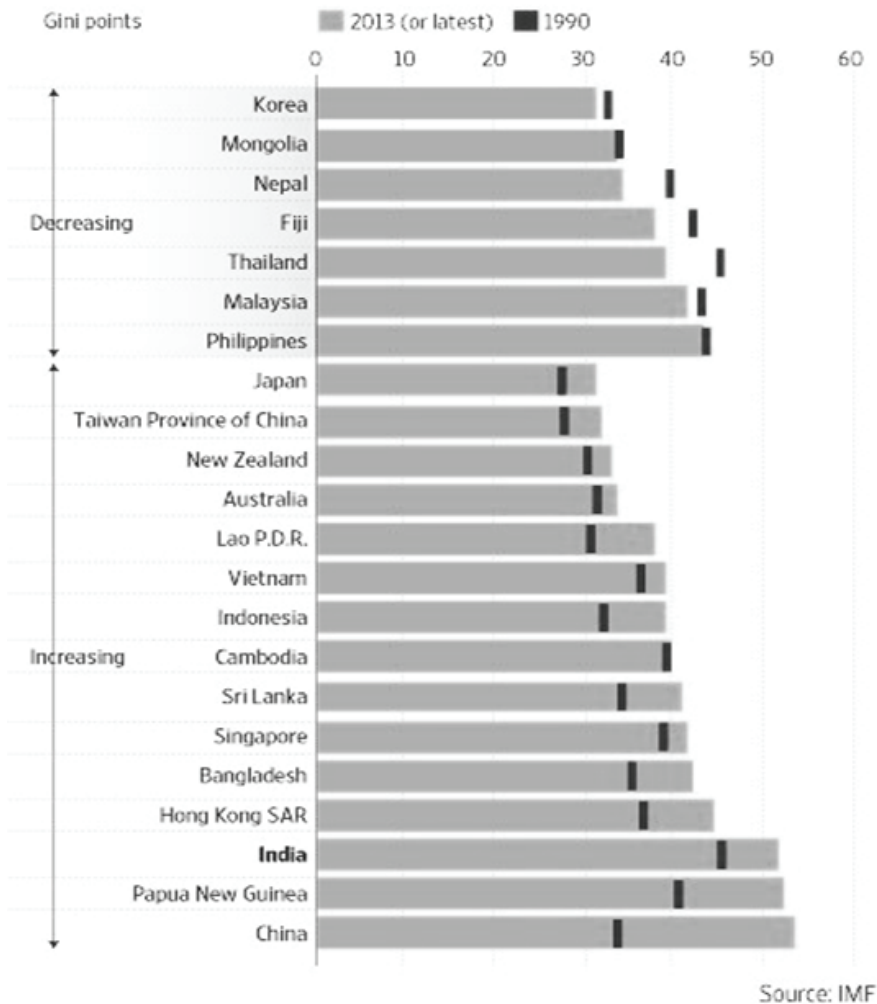
The above statistics indicate that India should concentrate on increasing the capital asset base as a priority and later facilitate the expansion of short term trading strategies. Among other things, Algorithm Trading is leading to concentration of income in the hands of few. This could be an alarming sign, of facing the social risk of inequality of income distribution, as already warned by IMF.

**Economic Inequality - Proof by Gini Coefficient**

In the regional economic outlook for Asia & Pacific, International Monetary Fund (IMF) said that the countries in Asia are unable to reproduce the miracle “growth with equity” and apprised that in-equality has amplified in last twenty years, reducing the efficiency of growth and development to fight with poverty and abstaining the growth and expansion of an important middle class. Economic inequality can be measured by Gini Coefficient, which has been showing alarming signs for India. Figure 4 and 5, shows the same.

Figure: 4

# INEQUALITY IN ASIA

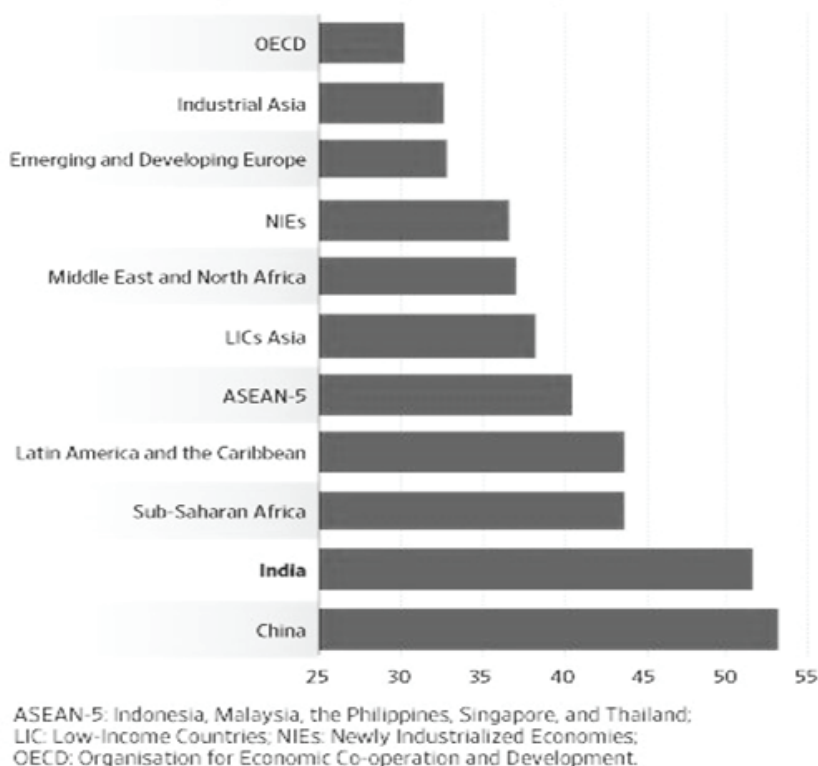


Gini co-efficient of India, was calculated at 51 in the year 2013, which increased from 45 in the year 1990, only due to rising in-equality amongst urban and rural regions, also amongst urban parts. Gini co-efficient of China also increased to 53 in the year 2013, which was calculated at 33 in the year 1990. During the time when in-equality was coming down for most of the parts of the world, the usual net Gini co-efficient in Asia had risen to 40 in the year 2013 which was 36 in the year 1990, which was informed as the maximum compared to the rest of the world. Gini co-efficient is an extensively used parameter of an inequality and considers into account, the income distribution among inhabitants of a country. The earning, in this case, has been calculated net of taxes and transfers. The greater, the Gini coefficient, the higher is the inequality.

Figure: 5

## INCOME INEQUALITY LEVEL: THE GLOBAL STORY

Net Gini Index; in Gini points; 2013; average across the region



Source: IMF

The above facts clearly indicate that our key focus should be on addressing fundamental issues of our country that would ensure stability and growth in future.

### Suggestions for Achieving a Sustainable Long Term Economic Growth

In the light of facts stated above, following suggestions are proposed for Regulators and Market Participants.

1. The regulators of the market should ensure that traders strike a balance between long term trades and short term trades.
2. Training and education of Algorithm Trading and techniques should be disseminated across the market.
3. A proportion of earnings through Algorithm Trades should be used for promoting financial literacy.
4. Market wide limits should be defined linked to capital formation rate.

## Conclusion

The regulator in any market should evaluate the trade-off between short term liquidity and long term growth. The super car, Algorithmic Trading would turn as a blessing for the next generation, only when the economy is stable and promising with consistent growth backed by capital formation.

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### Authors' Profile

**Rishi Mehra** is a Consultant, "DEA-NIFM Research Program". He holds degrees of CFA, CTM, MBA, LIFA, IFRA, CIA and is CEO of Corporate Partners. His Corporate edge has been in training the employees of Government Departments & Premier Corporates from India and Overseas including NSE, BSE, NIFM, NISM, AGIF, FSI (Ministry of External Affairs), FPSB, Ministry of Finance, National Academy for Training & Research in Social Security etc. His expertise lies in the areas of Financial Planning, Management and Modelling, Security Analysis, Portfolio Management, Technical Analysis, International Financial Management, Derivatives & Risk Management, Merchant Banking, Management of Financial Institutions, Treasury & Forex Management etc. He blends a diverse experience in practical areas as a Freelancer and the theoretical fundamentals as a visiting Professor to premier Management Institutions, like University of Bath (UK), FMS, SRCC, NIFM, IMT, Manipal University, DU, NDIM, ICFAI, IBS, EMPI, SRIM, IAMR, AIMT, BIFM, IIMT, JIMS, JIM, AKGIM, JREIM, INFLUX etc.

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