

# Understanding High Frequency Trading

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# What is High Frequency Trading?

SEC definition:

- Fast order placement
- Minimal latency
- Multiple modifications
- Quick cancellations
- Flat position at the end of day

# Orders profile: Last activity (Stocks)

*All values in %*

	Cash		Futures		Options	
	2009	2013	2009	2013	2009	2013
<b>Algo</b>	12.42	62.19	39.18	93.30	20.56	84.89
Entered	0.17	0.06	0.03	0.09	0.08	0.06
Modified	0.02	0.03	0.04	0.09	0.09	0.19
Traded	3.91	12.37	1.59	2.20	0.74	2.61
Canceled	8.31	49.73	37.52	90.91	19.65	82.03
<b>Non Algo</b>	87.58	37.81	60.82	7.70	79.44	15.11
Entered	8.93	4.46	1.42	0.41	8.29	2.25
Modified	0.80	0.43	0.34	0.09	2.16	0.31
Traded	56.11	25.69	14.17	3.00	24.95	6.03
Canceled	21.75	7.24	44.88	3.20	44.05	6.52

# Orders profile: Last activity (Nifty)

*All values in %*

	<b>Futures</b>		<b>Options</b>	
	Pre	Post	Pre	Post
<b>Algo</b>	11.11	<b>87.84</b>	21.71	<b>93.38</b>
Entered	0.06	0.10	0.05	0.01
Modified	0.04	0.12	0.03	0.02
Traded	3.02	<b>7.73</b>	1.49	<b>7.47</b>
Canceled	7.99	<b>79.88</b>	20.15	<b>85.88</b>
<b>Non Algo</b>	88.89	<b>12.16</b>	78.29	<b>6.62</b>
Entered	3.19	<b>1.08</b>	1.87	<b>0.48</b>
Modified	0.65	0.19	0.44	0.08
Traded	45.37	<b>8.18</b>	32.76	<b>4.43</b>
Canceled	39.67	<b>2.70</b>	43.22	<b>1.63</b>

- Significant increase in the level of algorithmic trading (AT) in the markets in the last few years.
- **Concerns:** AT, and its close peer, high frequency trading (HFT), are hurting the integrity of the markets, by
  - ① Generation of *phantom liquidity*.
  - ② Engaged in *manipulative strategies*.
  - ③ Involved in *frontrunning/quote stuffing*.
  - ④ Made markets more fragile by increasing the level of *systemic risk*.
  - ⑤ Hurting *investors*: Created two-tiered markets with differential access to market center trading infrastructure.
  - ⑥ Are primarily *liquidity takers*.
  - ⑦ Trust deficit
- **Fear:** With all these concerns, the real investors are losing confidence in the financial markets.
- Thus, a need to regulate (and if need be, **contain**) the rise of this activity.

# Validity of concerns

- Validity of the concerns remain *questionable*.
  - No established empirical/factual evidence of AT/HFT hurting the markets.
  - Though enough evidence on AT/HFT on improving market quality.
- In addition, most of the concerns not new to the financial markets.
  - Issues related to market manipulation, frontrunning have existed since long.
- Yes, ability to trade faster has altered the market microstructure.