



NSE Overall Broker Performance



Market Service Department

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The New Broker Performance Report

Today's traditional asset managers and stockbrokers find themselves increasingly pressured by demands, to monitor and measure their activities in the stock market, as the regulatory, operating and due diligence environments require better tracking, monitoring, and reporting of market activities. The NSE Market Services department created a Broker Performance report, which shows the trading performance of dealing member firms, ranked by the volume and value of trades in descending order.

The existing Broker Performance report shows data jointly compiled for mostly equity and ETF trades over a selected period (according to broker preference). This performance ranking method is not holistic as it ignores Fixed Income trading activities and market deals, which are necessary measures of trading frequency to determine market interactions in all asset classes and transactions frequency of investor engagement in the market.

Intending to improve the existing broker performance report, the Market Services team came up with an extension to the original benchmarking system that will not only eliminate the limitations of the current broker performance report but will give more detailed insight on brokers' market activity and spur participation in other exchange products, drive complete fairness. This methodology as shown below has been shared with the necessary stakeholders and feedback has been reviewed and adopted.

The New Broker Performance Report shows the performance of Brokers ranked by the sum of total calculated points in deals, volume, and value across all asset classes. The New Broker Performance Report would come in 3 different levels, distinguished by fields to be displayed

- Full/Top 50 Broker Performance Report Level 1: This report would show the ranking of the Brokers with the total points for the requested period.
- Full/Top 50 Broker Performance Report Level 2: This report would show the ranking of the Brokers with the breakdown of points in each asset class that cumulates to the total point for the requested period.
- Full/Top 50 Broker Performance Report Level 3: This report would show the ranking of the Brokers with the breakdown of the Volume, Value, Deals in each asset class, the points in each asset class, and the total point for the requested period

Additional Features and Benefits

- Provides a more objective methodology in awarding top performing Stockbrokers.
- Integration of brokers' performance across all asset classes (Equity, Bonds and ETFs)
- Holistic ranking of brokers by deals (number of transactions), volume and value of trades
- Provides detailed insights and analysis into brokers' activities in the market
- Ensures level playing field across market participants
- Available in 3 reporting levels at affordable rates
- Available in various format (pdf, word, excel, csv, R, Python, XML payload)

Table 1: Report Fields by Levels

Fields	Description	Level_1_Depth	Level_2_Depth	Level_3_Depth
BROKER_CODE	The unique identifier of dealing member firm	Y	Y	Y
BROKER_NAME	Dealing Member firm's legal registered name	Y	Y	Y
EQT_VOLUME	Equity volume			Y
EQT_VALUE	Equity Value			Y
EQT_DEAL	Equity deal			Y
EQUITY_POINT	Computed equity point		Y	Y
BND_VOLUME	Fixed Income volume			Y
BND_VALUE	Fixed Income Value			Y
BND_DEAL	Fixed Income deals			Y
BOND_POINT	Computed Fixed Income Point		Y	Y
ETP_VOLUME	Fixed Income volume			Y
ETP_VALUE	Fixed Income Value			Y
ETP_DEAL	Fixed Income deals			Y
ETP_POINT	Computed ETP point		Y	Y
TOTAL_POINT	Overall Total point	Y	Y	Y

Methodology

The data used in this analysis comprises the number of deals, volume, and value of securities traded across all asset classes. The period under study is from January till June (H1 2020). The justification behind using the deals in addition to volume and value performance is to capture the number of transactions and interactions across the market rather than just the quantity and value of trades in the market. Below are the equations used for the proposed scheme:

Individual asset class;

$$P_{i,\alpha,vol,val,deal}(\delta_i) = \omega_\alpha \sum_{\alpha} \left(\frac{\delta_{i,\alpha,vol}}{VOL_\alpha} + \frac{\delta_{i,\alpha,val}}{VAL_\alpha} + \frac{\delta_{i,\alpha,deal}}{DEALS_\alpha} \right)$$

VOL_α = Total volume of trades in individual asset class

VAL_α = Total value of trades in individual asset class

$DEALS_\alpha$ = Total deals in individual asset class

ω_α = Weight of asset class

$\delta_{i,\alpha,vol}$ = Volume of securities traded by broker in individual asset class

$\delta_{i,\alpha,val}$ = Value of securities traded by broker in individual asset class

$\delta_{i,\alpha,deals}$ = Number of deals executed by broker in individual asset class

Weight Selection:

If the weight based on the total traded value for an asset class is greater than the threshold then we will adjust the weight based on the number of participants in all asset classes.

$$\omega_i = \left(\frac{\varphi_i}{\sum_{k=1(\text{exclude } j)} \varphi_k} * (1 - \varphi_{cap.}) \right)$$

ω_i = the i th Weight of asset class to be adjusted

φ_i = Percentage Participant in i th asset class

$\varphi_{cap.}$ = Threshold Factor

The final weight across asset classes must sum to 1

$$\sum_i \left(\frac{\omega_{i,participant} + \omega_{i,assetClass}}{2} \right) = 1$$

Future Implementation:

1. Further expansion of deals to give brokers with highest retail traders as well, since most brokerage firms offer online trading activities
2. Machine Learning of AI will be used to determine this ranking in the Future

Figure 1: Sample Broker Performance Report

CODE	BOND	ETF	EQUITY	WA_BOND	WA ETF	WA EQUITY	WA_TOTAL
BRK4	1.0721888907996	0.0162159655402	0.2295959772985	0.2339321216290	0.0016510801277	0.1561252645630	0.3917084663197
BRK36	0.0014730064316	1.9980251560045	0.0221424828779	0.0003213832214	0.2034352886114	0.0150568883570	0.2188135601898
BRK2	0.0000000000000	0.0000000000000	0.2282687078339	0.0000000000000	0.0000000000000	0.1552227213270	0.1552227213270
BRK1	0.1665378869136	0.0146515497207	0.1686055259437	0.0363355389630	0.0014917941534	0.1146517576417	0.1524790907581
BRK3	0.0000000000000	0.0274835430382	0.1754425614481	0.0000000000000	0.0027983243821	0.1193009417847	0.1220992661668
BRK6	0.0588313846519	0.0134031858685	0.1526840277302	0.0128359384695	0.0013646880157	0.1038251388566	0.1180257653418
BRK5	0.0000000000000	0.0081646497867	0.1621368639953	0.0000000000000	0.0008313097965	0.1102530675168	0.1110843773133
BRK7	0.0291811709291	0.0573416770839	0.1262495038040	0.0063668009300	0.0058384253031	0.0858496625867	0.0980548888198
BRK6	0.3367178993989	0.0378871388136	0.0162643251249	0.0734652735052	0.0038575995883	0.0110597410849	0.0883830641784
BRK12	0.0000000000000	0.4634371789482	0.0577016044602	0.0000000000000	0.0471863309475	0.0392370910329	0.0864234219804
BRK17	0.0062267729812	0.1905195930874	0.0671364513303	0.0013585686504	0.0193983585689	0.0456527869046	0.0664097141240
BRK8	0.0000000000000	0.0067942202955	0.0725720360720	0.0000000000000	0.0006917751574	0.0493489845290	0.0500407596863
BRK14	0.0185936598390	0.0000000000000	0.0665805563570	0.0040567985103	0.0000000000000	0.0452747783228	0.0493315768331
BRK9	0.0722770829138	0.0000000000000	0.0464176072739	0.0157695453630	0.0000000000000	0.0315639729463	0.0473335183093
BRK13	0.0000000000000	0.0015095030418	0.0646956742579	0.0000000000000	0.0001536948552	0.0439930584954	0.0441467533506
BRK55	0.1612899787249	0.0029283531515	0.0117164457210	0.0351905408127	0.0002981595936	0.0079671830903	0.0434558834966
BRK39	0.1452199636708	0.0000000000000	0.0154214393808	0.0316843557100	0.0000000000000	0.0104865787789	0.0421709344889
BRK24	0.0050212095275	0.0950599841299	0.0453586504104	0.0010955366242	0.0096788347478	0.0308438822791	0.0416182536510