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#### CREATING A SYSTEMATIC TRADING PLAN WITH AT THE MONEY CALENDAR CALL SPREAD IN NIFTY

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#### **ABSTRACT**

In the retail investor segment, brokers receive meagre brokerage revenues from the Options segment of Stock Market. Retail Investors have limited or no knowledge about options segment of the market, and also there is a huge perception among them that trading options is extremely risky. Thus, there is a need to create a Systematic Trading Plan in options which carries low risk and is easy to understand. A Research was conducted in Nifty (Index of National Stock Exchange) to quantify the risk and returns for At the Money Calendar Spread (An Options Strategy). Quantitative results are shown by applying At the Money Calendar Call Spread in Nifty for a period of 42 weeks, and results show remarkable profits with low risk by acting only twice on monthly basis at a prescribed time, and in a prescribed simplistic manner. Even a beginner in stock market can take such simplistic decisions. By entering At the Money Calendar Spread in Nifty on first day of a week before Current Month Expiry in a prescribed manner, and exiting on current month expiry, traders can make a net annualized return of 44%.

#### **KEYWORDS**

At the Money Calendar Call Spread, Fixed entry and exit points, Nifty Options, Simplistic decisions, Systematic Trading Plan.

#### INTRODUCTION

f we analyze the average brokerage received from the retail traders (with lack of in-depth knowledge of Stock Market) by leading brokerage houses from different segments of Stock Market, Brokerage from Options segment is the least. Options are a relatively newer segment in Stock Market, and retail traders have limited knowledge of the same. They mainly follow basic Option strategies involving low margin requirements like Long Strangles and Long Straddles. These strategies work only if there is a huge move in the Stock (More than 5-6%) in either direction from the point of entry till expiry of Monthly F&O Series. This often is not the case, and traders end up with 100% loss of their capital invested in these strategies (because of time decay of premium) on expiry. This has created a Perception among retail investors that Options are highly risky instruments of trading. This Perception partially explains the reluctance of retail traders to allocate funds to options segment, and thus explains the lack of revenues of Stock Brokers from this segment. To boost the trader sentiment, and to help the brokers to increase their revenues from Options segment, there is a serious case of educating retail traders about the relatively safer strategies in Options Leading Stock Brokers often organise investor camps for their clients. They can explain these strategies to their clients/ prospective clients in such camps. However, considering the average awareness level about options among general retail traders/ prospective traders, there is a need to create a Systematic Trading Plan in Options which has low risk, is easy to explain, and can be easily implemented by the traders/ prospective traders.

Calendar Spread is a relatively safe strategy in Options. Calendar Spread involves simultaneous buying and selling of equal quantity of options of the same stock and type with same strike price but different expiration Months. In Calendar Spread, far month options are bought, and near month options are sold. Calendar spread can be created with both Calls and Puts, and is also known as time spread or horizontal spread. When this strategy is created by using calls, it's called Calendar Call spread. Near month options depreciate faster than far month options, and this is the essence of this strategy. Maximum gains are pocketed if the Stock remains neutral. This will ensure almost total depreciation of near month options on expiry. Far month options will still have substantial premiums attached to them, and hence result in reasonable profits for the traders. Important to note about Calendar spreads is that they will give profits only in a certain range. The profit range will vary with the different strike prices chosen, as well as with entry at different time points. If stock moves out of this range, either on the upside or on the downside, losses are limited. Absolute losses on expiry will depend upon how far away the stock is from the chosen strike price, more will be the fall in far month bought call will become zero and will give maximum possible profit. However, more the stock falls from the chosen strike price, more will be the fall in far month bought call, and more will be the losses. As Option premiums can never be negative, the total loss will remain restricted. Maximum Loss will be limited to the difference between the premium paid to buy far month call, and the premium received by selling the near month calls. If the chosen strike price becomes deep in the money, both the near month and far month calls will approach their intrinsic or expiry value (which will be the same for both near month and far month calls). Maximum Loss in this case will again be limited to the difference between the premium paid t

In Indian Stock Markets, highest volumes in Options come from Nifty. A Research was conducted in Nifty by entering Calendar spread during different time points in a monthly F&O series. Aim of this research was to create a Systematic and Simple Trading Plan for retail traders which has low risk, is easy to explain, is easy to implement by the retail traders, and earns decent profits. This can be introduced by the Stock Brokers to their retail clients/ prospective clients in the Investor Camps, or through mailers. At the Money Strike price was chosen for creating Calendar Spread, and Monthly Expiry was chosen as the Exit Point. Time Period for research was between January 2008 and June 2011.

#### **OBJECTIVES OF RESEARCH**

Objectives of Research are summarized as under:

- To create a Systematic Trading Plan with Low Risk At the money Calendar Call Spread in Nifty
- To create the plan in such a manner that it is easy to understand by the Retail Investors, and is also perceived as a low risk trading instrument
- To help increase revenues of brokers from options from the retail investor segment

#### **RESEARCH DESIGN**

Nifty was the Stock chosen for research. Analysis of Historical Options data for Indian Markets suggests that Nifty generates the highest volumes in Options (In both quantity and Rupee terms). Nifty is thus the most liquid stock in options, and hence was chosen for research. Apart from a few other stocks like Reliance and State Bank of India, liquidity in options is much lower. Calls of At the Money strike price were chosen to create calendar spreads. At the Money Calls were chosen as this strike price gives maximum time value in near month series. As discussed above, the essence of this strategy is that current month calls depreciate faster than far month calls. To gain maximum from this, we need to select strike price with maximum time value.

It was assumed that one call of near month (current month) expiry at the money strike price was sold (shorted), and against this, one call of far month (next month) at the money expiry was bought.

Each F&O series in NSE (National Stock Exchange) lasts for 4-5 months. This series expires on last Thursday of each month, and next series starts on the next working day. Traders can trade in current month and next two month series at any point of time. Expiry for current month series was chosen as the reference point for research. This was also chosen as the exit point for Calendar spread. Four different time points during current month series were chosen as entry points for the strategy. These points were first working day of three weeks before expiry, first working day of two weeks before expiry, and first working day of expiry week. At the beginning of a series, more time value is attached to the calls, and as the expiry approaches, this time

value depreciates. The implication for research is that different entry points may give different results. Entry near to expiry may mean expiry happening in the desired profitable range. However, this may also mean lesser time value for both current month and next month calls, and hence lesser profitability. On the contrary, entry during early part of the series will get better time value. However, as the expiry will be farther, its probability of happening in the desired profitability range will be lesser. Early entry will give more profits than later entry if the expiry happens in the desired profitability range. These four entry points were named as Entry Point 1, Entry Point 2, Entry Point 3, and Entry point 4 respectively, with Entry Point 1 being the earliest entry, and Entry Point 4 being the later entry. Opening price for the selected strike price calls was noted from the NSE website as Entry Price. Similarly, Settlement price on Current month Expiry (for both current month and next month calls) was noted from the NSE website as squaring off price.

Nifty can be traded in Strike prices with a difference of 100 (as per regulation). There was a brief period of a few months in 2008-2009 when Nifty fell below 3000, and Strike prices with a difference of 50 were available. However, volumes in the middle strike prices ending in 50's were meagre. Moreover, to maintain uniformity for the whole time period of research, only Strike prices ending in 100's were considered. At the Money Strike Price was chosen as follows:

- a) If Nifty opened exactly on the entry day at 100s, the exact Strike price was chosen to enter Calendar Spread. For instance, If Nifty opened at 5100, the same Strike Price (5100) was chosen as At the Money Strike Price.
- b) If Nifty for instance opened above 5100 and below 5150, 5100 was chosen as At the Money Strike Price
- c) If Nifty for instance opened above 5150, between 5150 and 5200, 5200 was chosen as At the Money Strike Price.

Uniform procedure was followed at each entry point every month to maintain uniformity of Research.

Time Period chosen for research was between January 2008 and June 2011. A total of 42 monthly F&O series were covered for research during this time period. Nifty was at its peak in January 2008. It started falling in the following months, and reached almost its 1/3rd level in October 2008. It remained in an extremely bearish phase till March 2009. Then there was an extremely bullish phase from April 2009 to December 2010. Nifty regained its peak in this period. This was followed by a range-bound phase from January 2011 to June 2011. The findings were subdivided in to three different phases as follows:

- a) Bearish Phase-January 2008 to March 2009
- b) Bullish Phase- April 2009 to December 2010
- c) Range Bound-January 2011 to June 2011

This would enable the Stock Brokers to explain behaviour of Calendar Spreads during different phases to the retail traders.

Calendar Spread strategy in question requires simultaneous buying and selling of Calls of different expiries, but with the same Strike Price. On an average, the prescribed margin for selling one Call of Nifty is 10%. However, since this particular strategy involves simultaneous buying of a Call with the same strike price, Brokers keep a margin on an average of around 7%. If for instance Nifty was at 5000, margin required for entry in this strategy was 7% of (5000 x 50), where 50 is the lot size of Nifty. Margin required in our example thus comes out to be Rs 17500. Opening level of Nifty at different entry points was chosen for calculating margin requirements. Average margin required during overall and different sub-periods was chosen as reference investment for calculating profitability. Annualized return was calculated as follows:

- 1) Entry Point 1 was first working day of three weeks before expiry week. Since margin was required for only 25 calendar days every month, annualized return was adjusted accordingly.
- 2) Entry Point 2 was first working day of two weeks before expiry week. Since margin was required for only 18 calendar days every month, annualized return was adjusted accordingly.
- 3) Entry Point 3 was first working day of one week before expiry week. Since margin was required for only 11 calendar days every month, annualized return was adjusted accordingly.
- 4) Entry Point 4 was first working day of expiry week. Since margin was required for only 4 calendar days every month, annualized return was adjusted accordingly.

Brokerage & Taxes are accounted for in the calculations @ Rs 25/ Lot. At entry point, Brokerage & Taxes are charged on all the two call options of the strategy. However, on expiry, Brokerage & Taxes are charged for only in the money Options (at the time of expiry). Traders need not exercise out of the money options and can let them expire without paying Brokerage & Taxes.



#### **TABULATION OF RESULTS**

TABLE 1: NET ADJUSTED ANNUALIZED PROFITS (RS) AT DIFFERENT ENTRY POINTS

	TABLE 1: NET ADJUSTED ANNUALIZED PROFITS (RS) AT DIFFERENT ENTRY POINTS					
S.no	Series	Entry Point 1	Entry Point 2	Entry Point 3	Entry Point 4	
1	June-11	-100	-200	-1700	-2050	
2	May-11	-2925	-2025	-275	200	
3	Apr-11	375	2675	2025	-675	
4	Mar-11	-150	-1850	-1800	600	
5	Feb-11	-325	725	2975	-2525	
6	Jan-11	-2975	-1475	2500	-1125	
7	Dec-10	50	1050	-1400	-400	
8	Nov-10	-1125	-4425	-2625	-525	
9	Oct-10	25	-1975	775	2575	
10	Sept-10	-2100	-1250	300	-225	
11	Aug-10	700	100	1275	325	
12	July-10	-1250	900	1400	-275	
13	June-10	-2350	-1850	-1850	1000	
14	May-10	-725	2325	3700	1750	
15	Apr-10	1275	-1025	2100	725	
16	Mar-10	-950	-650	-1500	-1350	
17	Feb-10	3550	550	2400	1625	
18	Jan-10	-1875	-2475	-2375	-525	
19	Dec-09	-650	300	-1450	1650	
20	Nov-09	-2200	-1200	1650	-825	
21	Oct-09	-1275	-725	-3075	-1875	
22	Sept-09	-2650	-2950	-1500	1025	
23	Aug-09	4525	500	500	400	
24	July-09	3150	-2150	2300	2125	
25	June-09	-75	-2375	-575	-325	
26	May-09	-850	2300	-700	-2050	
27	Apr-09	1500	2700	1100	300	
28	Mar-09	-1800	-1950	-1750	-2500	
29	Feb-09	2575	1275	-1125	1350	
30	Jan-09	-2875	-75	550	-2700	
31	Dec-08	2900	1850	1375	-5350	
32	Nov-08	225	-2425	3625	-2500	
33	Oct-08	-4775	-4275	-2025	4700	
34	Sept-08	1775	-4025	8050	-75	
35	Aug-08	75	-2125	-525	1300	
36	July-08	-700	3550	3150	2650	
37	June-08	-3375	125	-2475	3350	
38	May-08	-2875	-425	-2925	650	
39	Apr-08	6150	-1550	-900	2050	
40	Mar-08	2475	450	-450	800	
41	Feb-08	-175	2050	3575	100	
42	Jan-08	-2975	-4875	-2975	-1700	
43	Total Profitability (Rs)	-12775	-26900	9350	1675	
44	Average Margin (Rs)	16828	16682	16639	16671	
45	Net Annualized Return (%)	(-26.39%)	(-77.4 %)	44.4%	21.83%	
		, , . ,	, ,-,			

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research



TABLE 2: AVERAGE MARGIN IN RS (\*CALCULATED ON THE BASIS OF 7% MARGIN ON OPENING LEVEL OF NIFTY FUTURES AT RESPECTIVE ENTRY POINTS)

S.no	Series	Entry Point 1	Entry Point 2	Entry Point 3	Entry Point 4
1	June-11	19271	19530	18809	19054
2	May-11	20195	19142	19369	19037
3	Apr-11	20559	20430	20412	20615
4	Mar-11	19250	19096	18935	19845
5	Feb-11	19163	18900	18711	19079
6	Jan-11	21707	20738	19740	19968
7	Dec-10	21123	20948	20650	21140
8	Nov-10	21368	22190	21312	20755
9	Oct-10	21749	21637	21263	21420
10	Sept-10	19285	19863	20808	21245
11	Aug-10	18925	19068	19086	19355
12	July-10	18340	18792	18816	19110
13	June-10	17623	17539	17983	18638
14	May-10	18323	17780	17563	17465
15	Apr-10	18655	18774	18200	18715
16	Mar-10	17430	17969	17927	18200
17	Feb-10	16968	16534	16933	17168
18	Jan-10	18288	18463	18335	17486
19	Dec-09	17973	17868	17465	18169
20	Nov-09	16289	16870	17644	17752
21	Oct-09	17500	17297	18071	17497
22	Sept-09	16359	16520	16839	17143
23	Aug-09	16303	15894	15750	15960
24	July-09	15495	15495	15547	16104
25	June-09	15789	16065	15897	15078
26	May-09	12674	12775	15015	14840
27	Apr-09	11484	11848	11900	11995
28	Mar-09	9335	9006	9496	9961
29	Feb-09	9923	9940	10210	9419
30	Jan-09	10805	10010	9853	10171
31	Dec-08	9786	9870	10395	10728
32	Nov-08	10563	10675	9916	9415
33	Oct-08	13090	11480	10924	8841
34	Sept-08	15089	15901	14322	15071
35	Aug-08	15407	16135	15463	15351
36	July-08	13972	14035	14469	15071
37	June-08	17073	15680	15943	15138
38	May-08	18375	17448	17913	17210
39	Apr-08	17157	16394	16429	17913
40	Mar-08	17542	16729	16037	16146
41	Feb-08	18967	17591	18571	17955
42	Jan-08	21595	21718	19919	18942
43	Average Margin	16828	16682	16639	16671

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research

TABLE 3: Profitability calculated for three different sub-periods (Adjusted to Net Annualized Profitability as discussed under Research Design) a) Entry Point 1

Sub-Period	Profitability (Rs)	Average Margin (Rs)	Net Annualized Profitability (%)
January 2008 to March 2009 (Bearish)	(-3375)	14579	(-22.53%)
April 2009 to December 2010 (Bullish)	(-3300)	17521	(-13.09%)
January 2011 to June 2011 (Range Bound)	(-6100)	20024	(-74.13%)

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research

#### b) Entry Point 2

Sub-Period	Profitability (Rs)	Average Margin (Rs)	Net Annualized Profitability (%)
January 2008 to March 2009 (Bearish)	(-12425)	14174	(-118.5%)
April 2009 to December 2010 (Bullish)	(-12325)	17628	(-67.51%)
January 2011 to June 2011 (Range Bound)	(-2150)	19639	(-37%)

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research

## c) Entry Point 3

Sub-Period	Profitability	Average Margin	Net Annualized Profitability (%)
January 2008 to March 2009 (Bearish)	5175	13991	(81.82%)
April 2009 to December 2010 (Bullish)	450	17763	(4%)
January 2011 to June 2011 (Range Bound)	3725	19329	(106.58%)

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research

#### d) Entry Point 4

Sub-Period	Profitability	Average Margin	Net Annualized Profitability (%)
January 2008 to March 2009 (Bearish)	2125	13823	(93.52%)
April 2009 to December 2010 (Bullish)	5125	17869	(124.63%)
January 2011 to June 2011 (Range Bound)	(-5575)	19600	(-432.58%)

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research

TABLE 4: DIFFERENCE BETWEEN NIFTY FUTURES AT ENTRY AND EXIT POINTS

1         June-11         141         67         273         203           2         May-11         -358         -57         -122         -27           3         Apr-11         -89         -52         -47         -105           4         Mar-11         334         378         424         164           5         Feb-11         -212         -137         -83         -188           6         Jan-11         -598         -321         -36         -101           7         Dec-10         67         117         202         62           8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14<	S.no	Series	Entry Point 1	Entry Point 2	Entry Point 3	Entry Point 4
3         Apr-11         -89         -52         -47         -105           4         Mar-11         334         378         424         164           5         Feb-11         -212         -137         -83         -188           6         Jan-11         -598         -321         -36         -101           7         Dec-10         67         117         202         62           8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60 </td <td>1</td> <td>June-11</td> <td></td> <td></td> <td>273</td> <td>203</td>	1	June-11			273	203
3         Apr-11         -89         -52         -47         -105           4         Mar-11         334         378         424         164           5         Feb-11         -212         -137         -83         -188           6         Jan-11         -598         -321         -36         -101           7         Dec-10         67         117         202         62           8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60 </td <td>2</td> <td>May-11</td> <td>-358</td> <td>-57</td> <td>-122</td> <td>-27</td>	2	May-11	-358	-57	-122	-27
5         Feb-11         -212         -137         -83         -188           6         Jan-11         -598         -321         -36         -101           7         Dec-10         67         117         202         62           8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -12	3	Apr-11	-89		-47	-105
6         Jan-11         -598         -321         -36         -101           7         Dec-10         67         117         202         62           8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10 <td>4</td> <td>Mar-11</td> <td>334</td> <td>378</td> <td>424</td> <td>164</td>	4	Mar-11	334	378	424	164
7         Dec-10         67         117         202         62           8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66	5	Feb-11	-212	-137	-83	-188
8         Nov-10         -305         -540         -289         -130           9         Oct-10         -226         -194         -87         -132           10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66           21         Oct-09         -249         -191         -412         -24	6	Jan-11	-598	-321	-36	-101
9  Oct-10  -226	7	Dec-10	67	117	202	62
10         Sept-10         520         355         85         -40           11         Aug-10         71         30         25         -52           12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66           21         Oct-09         -249         -191         -412         -248           22         Sept-09         313         267         176         12           23         Aug-09         30         147         188         128	8	Nov-10	-305	-540	-289	-130
11       Aug-10       71       30       25       -52         12       July-10       169       40       33       -51         13       June-10       286       310       183       -4         14       May-10       -231       -76       -14       14         15       Apr-10       -76       -110       54       -93         16       Mar-10       280       126       138       60         17       Feb-10       12       136       22       -45         18       Jan-10       -358       -408       -372       -129         19       Dec-09       66       96       211       10         20       Nov-09       352       186       -35       -66         21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103 <t< td=""><td>9</td><td>Oct-10</td><td>-226</td><td>-194</td><td>-87</td><td>-132</td></t<>	9	Oct-10	-226	-194	-87	-132
12         July-10         169         40         33         -51           13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66           21         Oct-09         -249         -191         -412         -248           22         Sept-09         313         267         176         12           23         Aug-09         30         147         188         128           24         July-09         144         144         129         -30           25         June-09         -269         -348         -300	10	Sept-10	520	355	85	-40
13         June-10         286         310         183         -4           14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66           21         Oct-09         -249         -191         -412         -248           21         Oct-09         -249         -191         -412         -248           22         Sept-09         313         267         176         12           23         Aug-09         30         147         188         128           24         July-09         144         144         129         -30           25         June-09         -269         -348         -300	11	Aug-10	71	30	25	-52
14         May-10         -231         -76         -14         14           15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66           21         Oct-09         -249         -191         -412         -248           22         Sept-09         313         267         176         12           23         Aug-09         30         147         188         128           24         July-09         144         144         129         -30           25         June-09         -269         -348         -300         -103           26         May-09         716         687         47         97           27         Apr-09         193         89         74         47	12	July-10	169	40	33	-51
15         Apr-10         -76         -110         54         -93           16         Mar-10         280         126         138         60           17         Feb-10         12         136         22         -45           18         Jan-10         -358         -408         -372         -129           19         Dec-09         66         96         211         10           20         Nov-09         352         186         -35         -66           21         Oct-09         -249         -191         -412         -248           22         Sept-09         313         267         176         12           23         Aug-09         30         147         188         128           24         July-09         144         144         129         -30           25         June-09         -269         -348         -300         -103           26         May-09         716         687         47         97           27         Apr-09         193         89         74         47           28         Mar-09         415         509         369         236	13	June-10	286	310	183	-4
16       Mar-10       280       126       138       60         17       Feb-10       12       136       22       -45         18       Jan-10       -358       -408       -372       -129         19       Dec-09       66       96       211       10         20       Nov-09       352       186       -35       -66         21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103 <tr< td=""><td>14</td><td>May-10</td><td>-231</td><td>-76</td><td>-14</td><td>14</td></tr<>	14	May-10	-231	-76	-14	14
17       Feb-10       12       136       22       -45         18       Jan-10       -358       -408       -372       -129         19       Dec-09       66       96       211       10         20       Nov-09       352       186       -35       -66         21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148 <t< td=""><td>15</td><td>Apr-10</td><td>-76</td><td>-110</td><td>54</td><td>-93</td></t<>	15	Apr-10	-76	-110	54	-93
18       Jan-10       -358       -408       -372       -129         19       Dec-09       66       96       211       10         20       Nov-09       352       186       -35       -66         21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68	16	Mar-10	280	126	138	60
18       Jan-10       -358       -408       -372       -129         19       Dec-09       66       96       211       10         20       Nov-09       352       186       -35       -66         21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68	17	Feb-10	12	136	22	-45
20       Nov-09       352       186       -35       -66         21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68         33       Oct-08       -1043       -583       -424       171         34       Sept-08       -200       -432       19       -195 <td>18</td> <td></td> <td>-358</td> <td>-408</td> <td>-372</td> <td>-129</td>	18		-358	-408	-372	-129
21       Oct-09       -249       -191       -412       -248         22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68         33       Oct-08       -1043       -583       -424       171         34       Sept-08       -200       -432       19       -195         35       Aug-08       -188       -396       -204       -172	19	Dec-09	66	96	211	10
22       Sept-09       313       267       176       12         23       Aug-09       30       147       188       128         24       July-09       144       144       129       -30         25       June-09       -269       -348       -300       -103         26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68         33       Oct-08       -1043       -583       -424       171         34       Sept-08       -200       -432       19       -195         35       Aug-08       -188       -396       -204       -172         36       July-08       341       323       199       27 <td>20</td> <td>Nov-09</td> <td>352</td> <td>186</td> <td>-35</td> <td>-66</td>	20	Nov-09	352	186	-35	-66
23         Aug-09         30         147         188         128           24         July-09         144         144         129         -30           25         June-09         -269         -348         -300         -103           26         May-09         716         687         47         97           27         Apr-09         193         89         74         47           28         Mar-09         415         509         369         236           29         Feb-09         -49         -54         -131         95           30         Jan-09         -263         -36         9         -103           31         Dec-08         121         97         -53         -148           32         Nov-08         -260         -292         -75         68           33         Oct-08         -1043         -583         -424         171           34         Sept-08         -200         -432         19         -195           35         Aug-08         -188         -396         -204         -172           36         July-08         341         323         199	21	Oct-09	-249	-191	-412	-248
24         July-09         144         144         129         -30           25         June-09         -269         -348         -300         -103           26         May-09         716         687         47         97           27         Apr-09         193         89         74         47           28         Mar-09         415         509         369         236           29         Feb-09         -49         -54         -131         95           30         Jan-09         -263         -36         9         -103           31         Dec-08         121         97         -53         -148           32         Nov-08         -260         -292         -75         68           33         Oct-08         -1043         -583         -424         171           34         Sept-08         -200         -432         19         -195           35         Aug-08         -188         -396         -204         -172           36         July-08         341         323         199         27           37         June-08         -562         -164         -239	22	Sept-09	313	267	176	12
25         June-09         -269         -348         -300         -103           26         May-09         716         687         47         97           27         Apr-09         193         89         74         47           28         Mar-09         415         509         369         236           29         Feb-09         -49         -54         -131         95           30         Jan-09         -263         -36         9         -103           31         Dec-08         121         97         -53         -148           32         Nov-08         -260         -292         -75         68           33         Oct-08         -1043         -583         -424         171           34         Sept-08         -200         -432         19         -195           35         Aug-08         -188         -396         -204         -172           36         July-08         341         323         199         27           37         June-08         -562         -164         -239         -9           38         May-08         -414         -149         -282	23	Aug-09	30	147	188	128
26       May-09       716       687       47       97         27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68         33       Oct-08       -1043       -583       -424       171         34       Sept-08       -200       -432       19       -195         35       Aug-08       -188       -396       -204       -172         36       July-08       341       323       199       27         37       June-08       -562       -164       -239       -9         38       May-08       -414       -149       -282       -81         39       Apr-08       98       316       306       -118         40       Mar-08       -182       179       248       217     <	24	July-09	144	144	129	-30
27       Apr-09       193       89       74       47         28       Mar-09       415       509       369       236         29       Feb-09       -49       -54       -131       95         30       Jan-09       -263       -36       9       -103         31       Dec-08       121       97       -53       -148         32       Nov-08       -260       -292       -75       68         33       Oct-08       -1043       -583       -424       171         34       Sept-08       -200       -432       19       -195         35       Aug-08       -188       -396       -204       -172         36       July-08       341       323       199       27         37       June-08       -562       -164       -239       -9         38       May-08       -414       -149       -282       -81         39       Apr-08       98       316       306       -118         40       Mar-08       -182       179       248       217         41       Feb-08       -133       260       -20       156	25	June-09	-269	-348	-300	-103
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31     Dec-08     121     97     -53     -148       32     Nov-08     -260     -292     -75     68       33     Oct-08     -1043     -583     -424     171       34     Sept-08     -200     -432     19     -195       35     Aug-08     -188     -396     -204     -172       36     July-08     341     323     199     27       37     June-08     -562     -164     -239     -9       38     May-08     -414     -149     -282     -81       39     Apr-08     98     316     306     -118       40     Mar-08     -182     179     248     217       41     Feb-08     -133     260     -20     156	29	Feb-09	-49	-54	-131	95
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35     Aug-08     -188     -396     -204     -172       36     July-08     341     323     199     27       37     June-08     -562     -164     -239     -9       38     May-08     -414     -149     -282     -81       39     Apr-08     98     316     306     -118       40     Mar-08     -182     179     248     217       41     Feb-08     -133     260     -20     156	33	Oct-08	-1043	-583	-424	171
36     July-08     341     323     199     27       37     June-08     -562     -164     -239     -9       38     May-08     -414     -149     -282     -81       39     Apr-08     98     316     306     -118       40     Mar-08     -182     179     248     217       41     Feb-08     -133     260     -20     156	34	Sept-08	-200	-432	19	-195
37     June-08     -562     -164     -239     -9       38     May-08     -414     -149     -282     -81       39     Apr-08     98     316     306     -118       40     Mar-08     -182     179     248     217       41     Feb-08     -133     260     -20     156	35	Aug-08	-188	-396	-204	-172
38     May-08     -414     -149     -282     -81       39     Apr-08     98     316     306     -118       40     Mar-08     -182     179     248     217       41     Feb-08     -133     260     -20     156	36	July-08	341	323	199	27
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40     Mar-08     -182     179     248     217       41     Feb-08     -133     260     -20     156	38	May-08	-414	-149	-282	-81
41 Feb-08 -133 260 -20 156	39	Apr-08	98	316	306	-118
	40	Mar-08	-182	179	248	217
	41	Feb-08	-133	260	-20	156
42 Jan-08 -1032 -1067 -553 -274	42	Jan-08	-1032	-1067	-553	-274

Source: Data collected from www.nseindia.com, and analyzed as per requirements of the research

#### FINDINGS AND CONCLUSIONS

- Overall, Maximum Net Annualized gains were realized from Calendar Call spreads at Entry Point 3, i.e. entry at opening time of first working day of the week before Expiry. These annual gains amounted to 44% (From Table 1). Comparing this with 10-11% annual gains from other safe traditional instruments like Fixed Deposits, Calendar Spread at Entry point 3 can be marketed as a Star Product by the Stock Brokers.
- There was an overall net annualized loss of 26.39 % and 77.4% respectively at Entry Points 1 and 2 (Table 1). Also, there was a loss in all the three subperiods in both Entry points 1 and 2 (Table 3a and 3b). Thus, creation of Calendar spread with At the Money Calls in Nifty should be avoided at Entry Points 1 and 2. Retail traders should be strictly cautioned by the Stock Brokers against this.
- At Entry Point 1, there was a net loss in 26 out of 42 F&O series. Talking about the sub-periods, maximum loss was visible at this Entry Point in the Range bound period (From January 2011 to June 2011). There was a loss in 5 out of 6 F&O series during this period. This can be explained by the fact that 5 expiries out of 6 took place more than 100 points from the entry level (Table 4). As Calendar spread gives profit in a range of around 100 points (positive or negative) from the entry point, expiries happening outside this range was the reason for the losses. This reinforces the hypothesis that earlier entry in a monthly F&O series in Calendar Spread reduces the Probability of Expiry happening in the Profitable Zone.
- At Entry Point 2, there was a net loss in 25 out of 42 F&O series. Maximum loss was witnessed in both Bearish and Bullish phases. 21 of the 36 expiries during this period accounted for a net loss. Out of these negative series, biggest loss making months were January 2008, September 2008, October 2008, and November 2010. If we analyze expiries of all these four months, January 2008 expiry was 1067 points negative from the entry point, September 2008 was 432 points negative from the entry point, October 2008 was 583 points negative from the entry point, and November 2010 expiry was 540 points negative from the entry point. If we analyze the loss making months in which expiries happened on the positive side from the entry point, the corresponding losses are not huge. For instance, March 2009 was 509 points positive from the entry point, but the loss was only Rs 1950. If we extend this analysis to Entry Point 1, biggest loss making series were October 2008, June 2008, January 2008 and January 2011 (In descending order of extent of loss). Expiries in these months were (-1043 Points), (-562 points), (-1032 Points), and (-598 points) respectively. Loss making months on the positive side again didn't produce huge losses. Thus, we can conclude that at Entry Points 1 and 2, there is more risk on the negative side in this strategy than the positive side. Another important point to note is that irrespective of the extreme conditions in the markets, maximum potential loss is restricted (Both Upside and Downside, Refer Tables 1 &4)
- Entry Point 4 gave an overall return of 21.83%. This is a respectable return by any standards. However, if we analyze the range bound sub period, there was a net annualized loss of 432.58%. This sub-period tilted the overall scale in favour of Entry point 3. For analyzing the loss at Entry Point 4 in the range bound sub-period, we need to concentrate on the fundamental reason for entering Calendar spread. This strategy as explained earlier works on the principle that current month premiums deplete much faster than next month premiums. However at Entry Point 4 (just 4 days before the current month

expiry), current month At the money premiums are already depleted to a large extent. In fact, in the last four days of current month expiry, next month premiums deplete more in absolute terms than the current month premiums. This explains the reason for the huge losses in a range bound phase. During Volatile sub-periods, Entry Point 4 performs better than Entry Point 3. This can be explained from the fact that Option premiums are more during volatile times. By default, current month premiums have to reach their Intrinsic Values on Expiry, but Next month premiums keep enjoying higher valuations. Also, Entry Point 4 is the nearest to expiry, and hence enjoys the added advantage of having the highest probability of expiry occurring in the Profitability range. Entry at Point 4 may be recommended to the clients if there can be a clear distinction between the various phases of the Market. However, in reality, this is often not so. Hence, Systematic Trading Plan should recommend entry only at Point 3 (Considering the huge potential losses in range bound phase at Entry Point 4).

- Entry Point 3 gave profitability in all the sub-periods. It can be argued that returns were only 4% in the bullish phase of the Market. However, huge gains in the other sub-periods compensates for this meagre profitability. In reality, it is extremely difficult to distinguish between different phases of the Market. This is more so in case of an average retail trader. Since Entry Point 3 is safe in all the Sub-periods, entry can be recommended to the retail traders during all times. Brokers can simply recommend the retail traders to enter the Calendar spread on the first day of a week before monthly expiry, and exit on Expiry to make net annualized returns of 44.4%. Constructing this strategy is also extremely simple. Traders just need to sell one At the Money Current Expiry Call, and buy one At the Money Next Month Expiry Call. Thus, by entering and exiting this strategy at a specified time every month, and in a prescribed manner extremely easy to understand, handsome gains can be made. No thorough knowledge of the Stock Market is required to make gains from this strategy. Even Part time traders can benefit from this. They need not be glued to their computer/ Television screens all the time (which is usually the case with traders). Thus, Brokers can exploit a much wider market, including people willing to invest in Stock Market, but who don't have time to track the markets on a regular basis.
- Stock Brokers can simply prepare an Illustration as shown in Table 1, and can distribute the same to their clients/ prospective clients through mailers. They can also present/ distribute this illustration during the seminars organised by them. An important point to note is that gains can't be made from this strategy in every F&O series. There will be some negative months and some positive months. Brokers should explain to their clients/ prospective clients the importance of Systematic Investment in this plan. The fact that this strategy restricts the maximum potential loss irrespective of extreme conditions in the Markets (Both upside and downside) should also be explained to the traders. This will give them confidence to invest in this low risk instrument of investment.
- There was a gain of only 4% during the Bullish Phase at Entry Point 3. Leading Brokers give a limit of up to 85% for trading in Options to Investors having a Cash Portfolio with them. During the Bullish Phase, Cash portfolio will be highly profitable, and hence will take care of the Profitability targets. However, Cash investors cut a sorry figure in Bearish and Range Bound phases. Brokers can recommend this strategy to their Cash Investors as a hedge against Bearish and Range Bound Phases. Because of the in-built limit, investors need not put any additional investment for trading options. This will be a win-win situation for both Cash Investors and Stock Brokers. Cash investors will get a hedging instrument at no additional investment, and Stock Brokers will get additional Brokerage revenues from Options segment.

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