Asset Allocation – Research Document

Equity and Debt Funds

Purpose of our study is to look into the pattern of return attribution generated by Balanced and MIPs over the 10 year period. We segregate the returns, standard deviation and return per unit risk on their policy allocation, rebalancing strategy, reallocation strategy and performance of fund manager.

Policy Allocation is the percentage of asset invested in equity, debt and money market instruments (termed as others). It generally does not deviate much from its policy mandate. Paper by Ibbotson and Kaplan shows that asset allocation explains about 90 percent of variability of a fund's return over time but it explains only about 40 percent of variation of returns among funds. This strategy is a static strategy.

Rebalancing Strategy: Over time as different asset classes generate different returns, portfolio is likely to drift away from its target allocation. Portfolio drift, in turn would generate return and risk not consistent with funds investment goal. Hence rebalancing strategy will bring back the asset mix back to its policy allocation, hence minimizing the risk generating out of portfolio drift.

Reallocation Strategy: Portfolio manager responds to changing capital market expectations. This strategy implies that its holdings will differ from portfolio's benchmark in an attempt to produce positive excess risk adjusted returns. Securities held different from benchmark weights reflect expectations of portfolio manager that differ from consensus expectations. If portfolio managers differential expectations are also on average correct, reallocation strategy may add value.

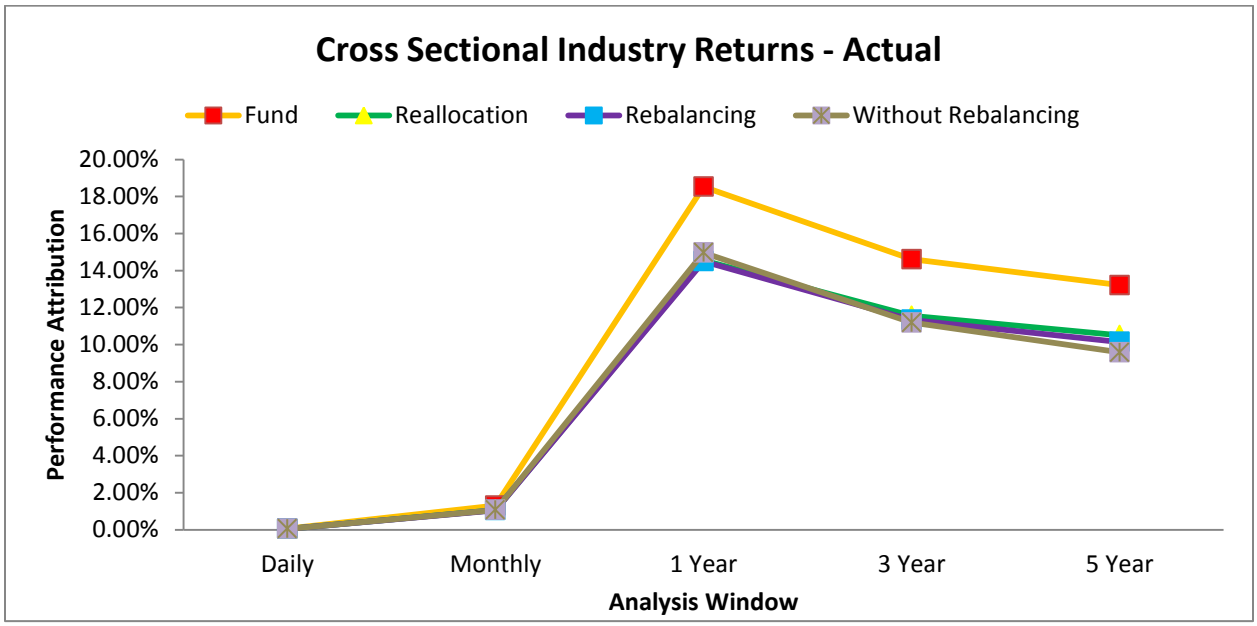
Fund Managers Performance: Any return which cannot be explained by the above strategies is attributed to the fund managers market timing ability.

Analysis consists of 23 funds over the following time period, 26th Dec 2003 to 31st Dec 2013. Out off these 12 are balanced funds and 11 are MIP. Analysis window considered by us is daily, monthly, annual, 3 year and 5 year.
Rolling returns were calculated for the above said window. Two asset classes were considered for the study, i.e. equity and others.
For the above asset classes the benchmarks used against them is CNX 500 for equity and TBill Index for others.

Questions posed by the study

- How important role does various strategies play over time in augmenting return, return per unit Risk and reducing volatility?
- How much variability of return across time and cross section is explained by asset allocation policy, active management strategies and fund manager expertise?
- How is volatility in the fund returns explained by the asset allocation, fund management strategies and fund manager excellence?
- Is the return generated by above said policies and strategies are at the expense of higher risk? Are these strategies adding actual value to the fund returns?

How do funds actually use various strategies over time to augment return?



If only **policy allocation** is followed

- return generated in 1 year – 14.97% which if not substituted with any other strategy declines to 9.59% in 5 years.

If **rebalancing** is followed with policy allocation

- return in 1 year moves down to 14.50% but in long run it pays off, return in 5 years 10.14%.

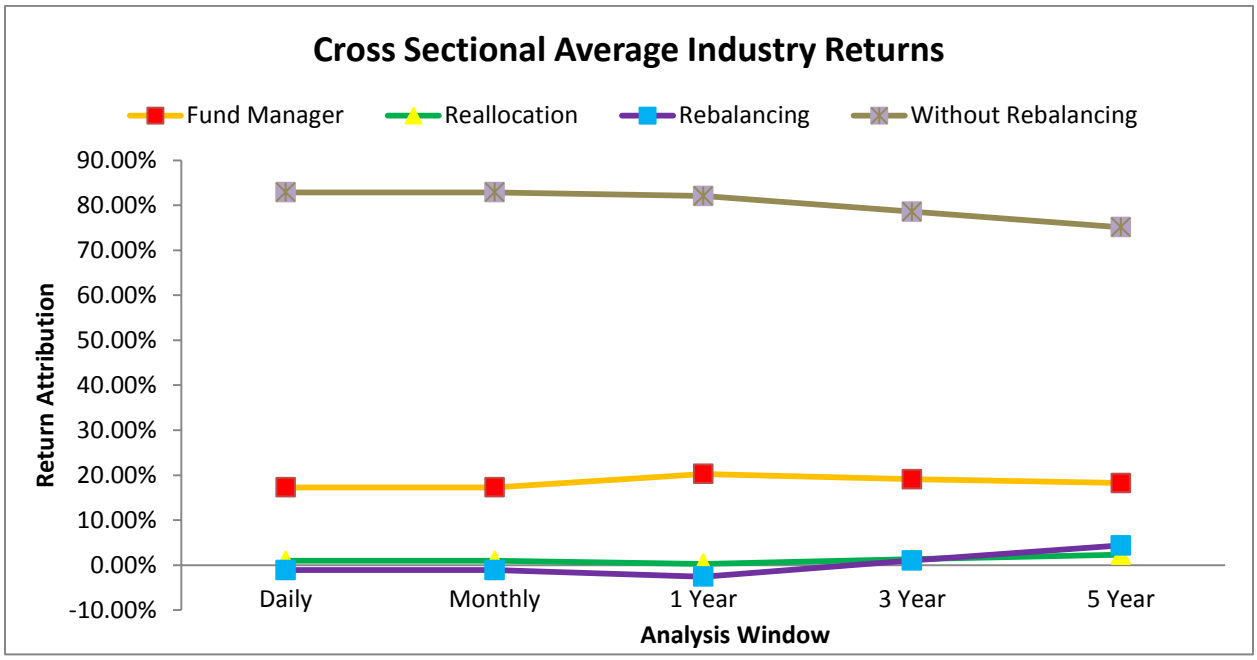
Augmenting rebalancing with **reallocation**

- return in year 1 moves to 14.54% and in 5 years to 10.51%.

Rest of the fund return observed is attributed to **fund manager**, therefore the presence of fund manager takes 1 year return from 14.54% to 18.50% and in 5 year he pushes the return to 13.20% from 10.51%.

Average across Industry Returns – Actual					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund	0.06%	1.31%	18.5%	14.6%	13.2%
Reallocation	0.05%	1.07%	14.54%	11.56%	10.51%
Rebalancing	0.05%	1.06%	14.50%	11.34%	10.14%
Without Rebalancing	0.05%	1.07%	14.97%	11.19%	9.59%

How important role does various strategies play over time in augmenting return - Attribution



Over the long term **policy allocation** becomes less important –

- in 5 year time period, it explains 75.11% of the return generated by fund compared to 82.05% in 1 year.

Rebalancing –

- in the long run it adds a mere 4.35% in return whereas in 1 year it reduces return by 2.58%.

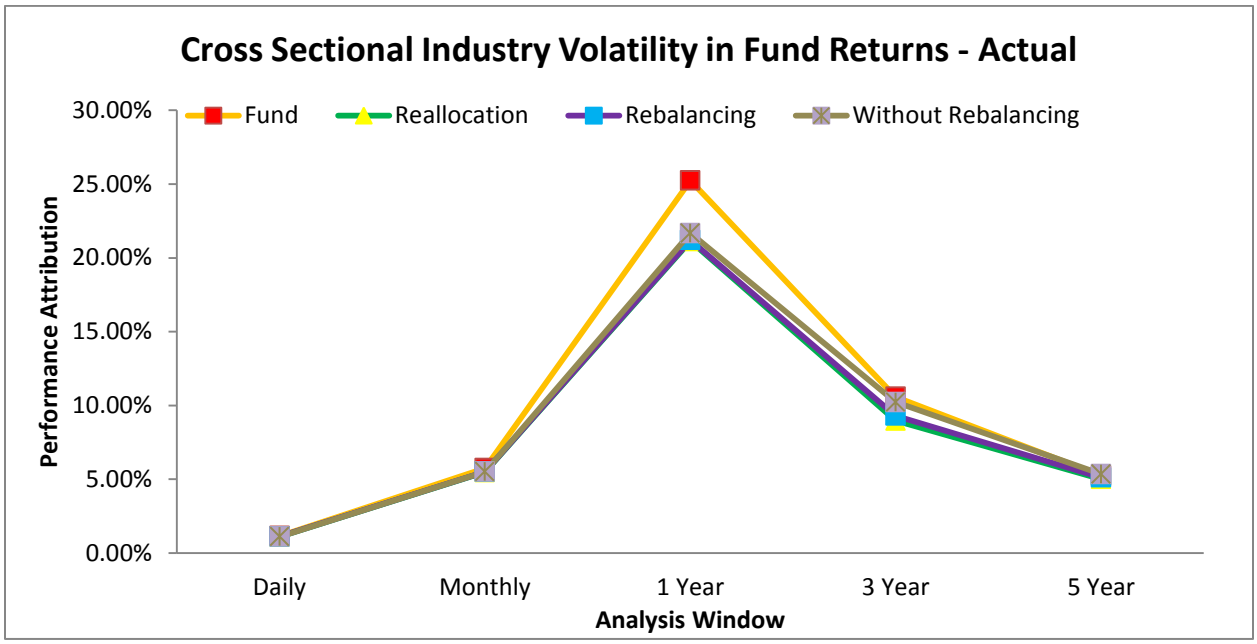
Reallocation –

- adds in 2.30% in 5 years and just 0.28% in 1 year.

Across time periods **fund managers** play a more important role in explaining the returns compared to rebalancing and market timing.

Average across Industry Returns – Attribution					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund Manager	17.26%	17.26%	20.26%	19.09%	18.24%
Reallocation	0.96%	0.96%	0.28%	1.31%	2.30%
Rebalancing	-1.13%	-1.13%	-2.58%	1.02%	4.35%
Without Rebalancing	82.90%	82.90%	82.05%	78.58%	75.11%

How does fund volatility change over time with respect to all the strategies?



1 Year

- Policy Allocation – fund volatility observed is 21.68%.
- Rebalancing – reduces the volatility to 21.21%.
- Reallocation – reduces standard deviation by 0.07% to 21.14%
- Fund Manager – increases the volatility to 25.2% from 21.14%.

3 Year

- Policy Allocation alone reduces the volatility from 21.68% to 10.22%.
- Rebalancing reduces the same from 10.22% to 9.30% (change of 1.12%).
- Reallocation further reduces it to 8.96%.
- Fund Manager - adds to the volatility - 10.6%.

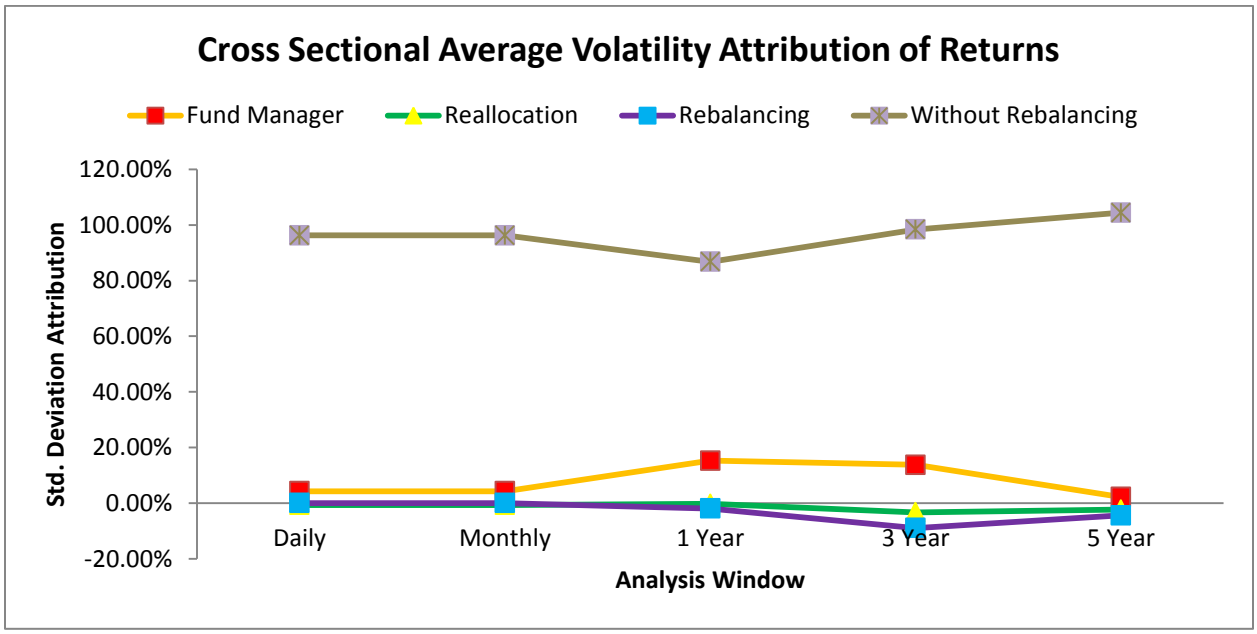
5 Year

- Policy Allocation reduces the volatility – 10.22% to 5.34%.
- Rebalancing – makes it 5.12% (reduction).
- Reallocation – further reduces std. deviation to 5.01%
- Fund Manager - increases volatility to 5.2%.

All strategies reduce the fund return volatility over time.

Average across Industry Std. Deviation – Actual					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund	1.15%	5.74%	25.2%	10.6%	5.2%
Reallocation	1.10%	5.47%	21.14%	8.96%	5.01%
Rebalancing	1.11%	5.50%	21.21%	9.30%	5.12%
Without Rebalancing	1.10%	5.50%	21.68%	10.22%	5.34%

How important role does various strategies play in explaining fund volatility - Attribution



Policy Allocation

- adds into the volatility of the fund from 1 year to 5 year.

Fund managers

- increase the volatility experienced by funds but its extent is reduced from 15.33% in 1 year to 2.24% in 5 years.

Reallocation

- reduces the standard deviation by 2.28% in the long run.

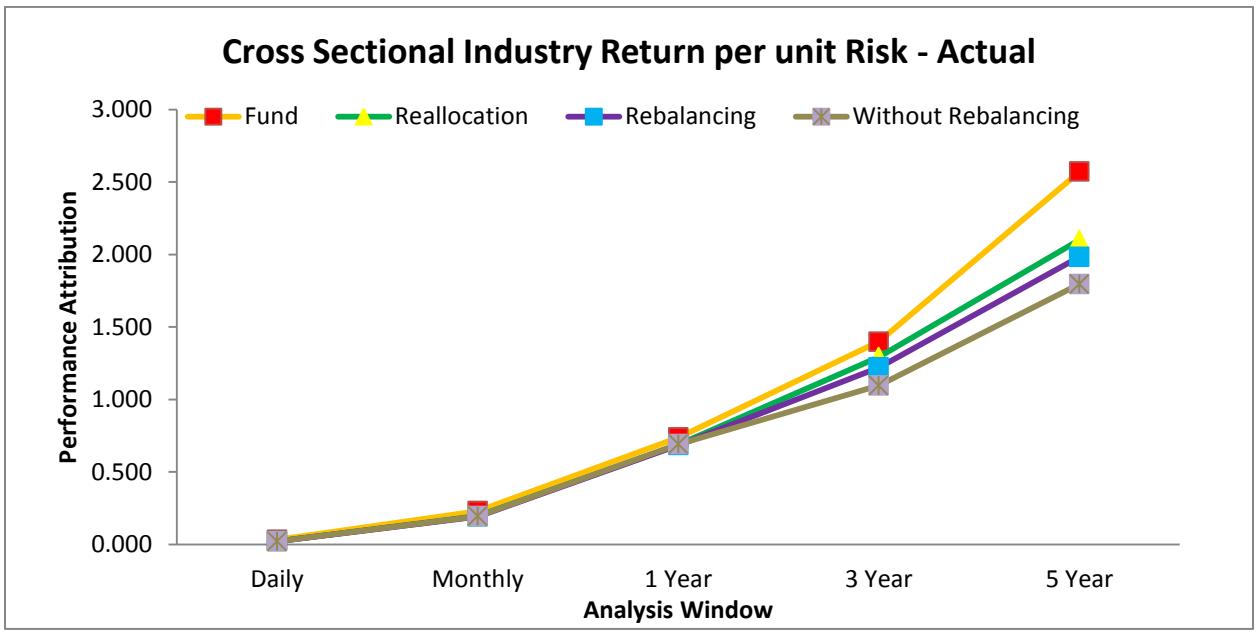
Rebalancing

- reduces the volatility by 1.89% in 1 year and in 5 year window it is reduced by 4.36%.

Both Rebalancing and Reallocation reduce the volatility experienced in fund returns. However, rebalancing plays a major role in the same.

Average across Industry Std. Deviation – Attribution					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund Manager	4.31%	4.31%	15.33%	13.83%	2.24%
Reallocation	-0.61%	-0.61%	-0.21%	-3.29%	-2.28%
Rebalancing	0.06%	0.06%	-1.89%	-8.88%	-4.36%
Without Rebalancing	96.24%	96.24%	86.77%	98.34%	104.40%

How does fund Return per unit Risk Coefficient change over time with respect to all the strategies?



Policy allocation

- as time increases the return per unit risk increases from 69.09% to 179.60%.

Rebalancing

- reduces the ratio to 68.41% (1 year) but over time increases the same to 198.33%.

Reallocation

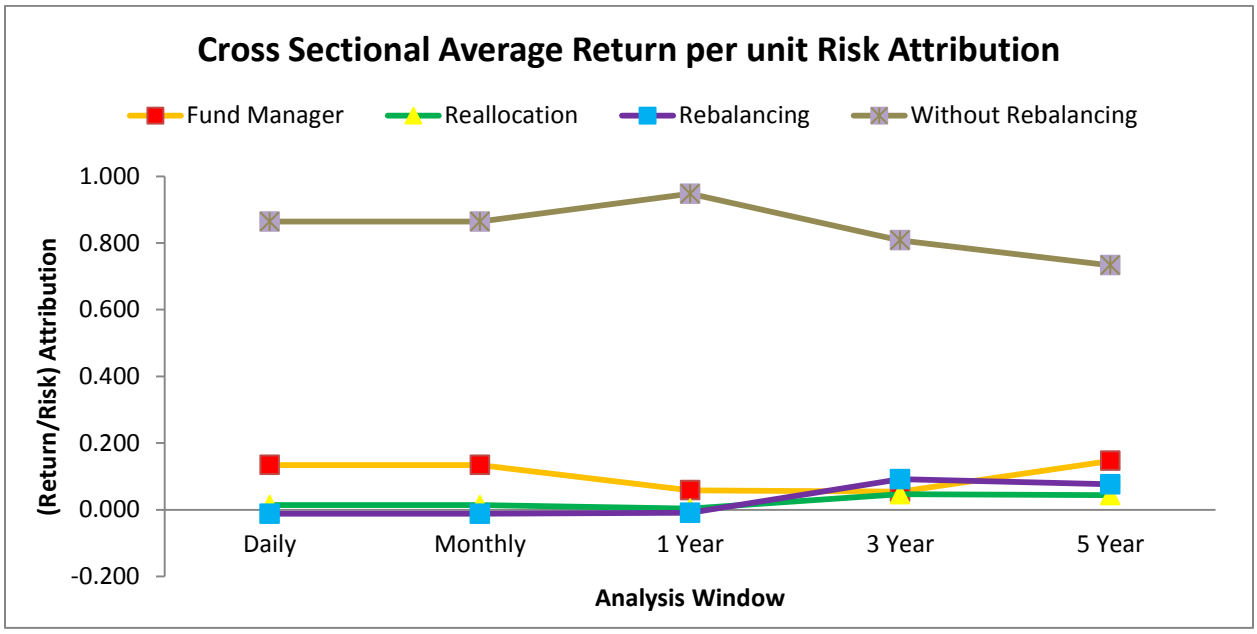
- adds to the return and takes the ratio to 68.82% and over time increases it to 210.04%.

Fund manager

- pays off for all the risk taken by him, he increases this ratio to 68.82% and over time increases it to 257.2% (increase of 47.16%).

Average across Industry Return per unit Risk – Actual					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund	3.19%	22.91%	73.7%	139.8%	257.2%
Reallocation	2.23%	19.57%	68.82%	129.26%	210.04%
Rebalancing	2.15%	19.20%	68.41%	122.02%	198.33%
Without Rebalancing	2.13%	19.48%	69.09%	109.57%	179.60%

Return per unit Risk generated by fund - Attribution



Policy allocation

- gave the highest return for every unit of risk taken.
- In 1 year time it gives a return of 94.77% for 1 unit of risk.

Rebalancing - is done so that the fund does not sway away from it investment objective due to market movement.

- In 3 and 5 year time it augments 9.14% and 7.63% respectively.

Reallocation

- augments the fund return for every unit of risk taken.
- Risk associated with reallocation is that of timing the market.
- In 3 and 5 year time reallocation adds in 4.64% and 4.37% respectively.

Fund managers

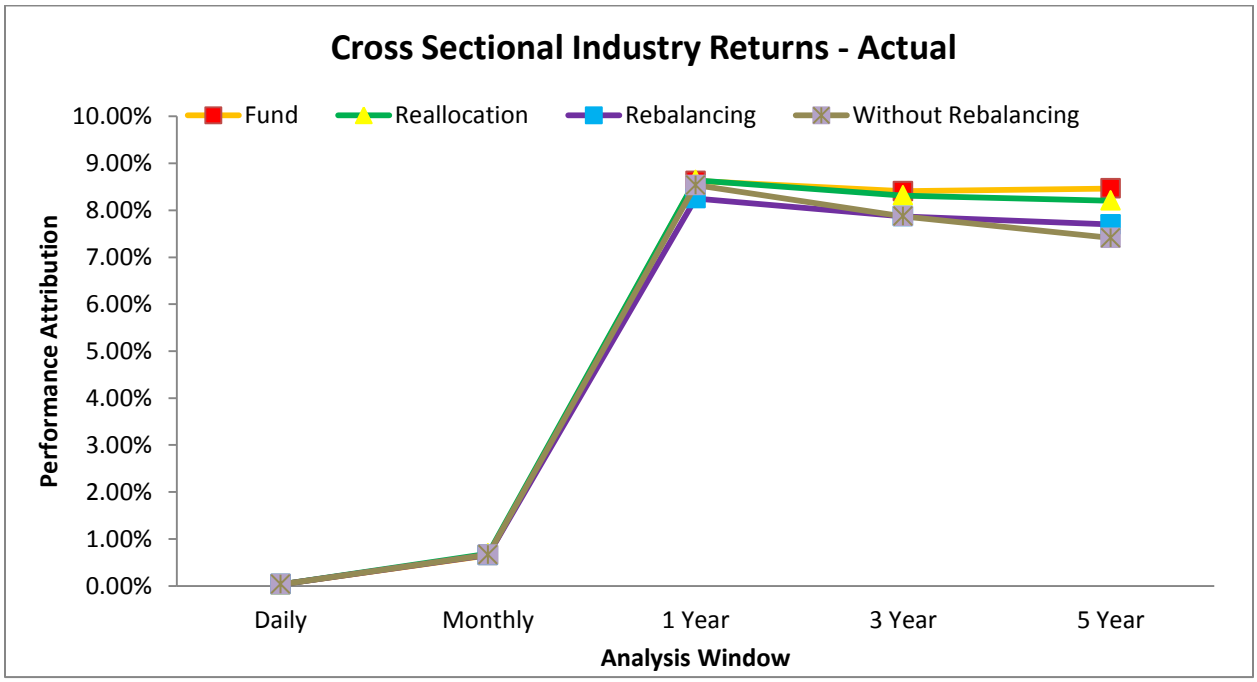
- add to the return by 14.69% for every unit risk taken by them. Risk associated with fund managers is limited to the aggressive stock and sectoral calls taken by them.

Giving a higher fee for active fund management is justifiable since they are adding onto the return.

Average across Industry Return per unit Risk – Attribution					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund Manager	13.44%	13.44%	5.86%	5.43%	14.69%
Reallocation	1.39%	1.39%	0.31%	4.64%	4.37%
Rebalancing	-1.22%	-1.22%	-0.93%	9.14%	7.63%
Without Rebalancing	86.40%	86.40%	94.77%	80.79%	73.31%

DEBT FUNDS

How do funds actually use various strategies over time to augment return?



If only **Policy Allocation** is followed

- 1 year return - 8.54% and over time return falls to 7.41%.

If **Rebalancing** is followed with Policy Allocation

- returns dip by 0.19% in year 1 and over 5 years returns increase by 0.29%.

Augmenting Rebalancing with **Reallocation**

- both in short and long run it augments the returns.

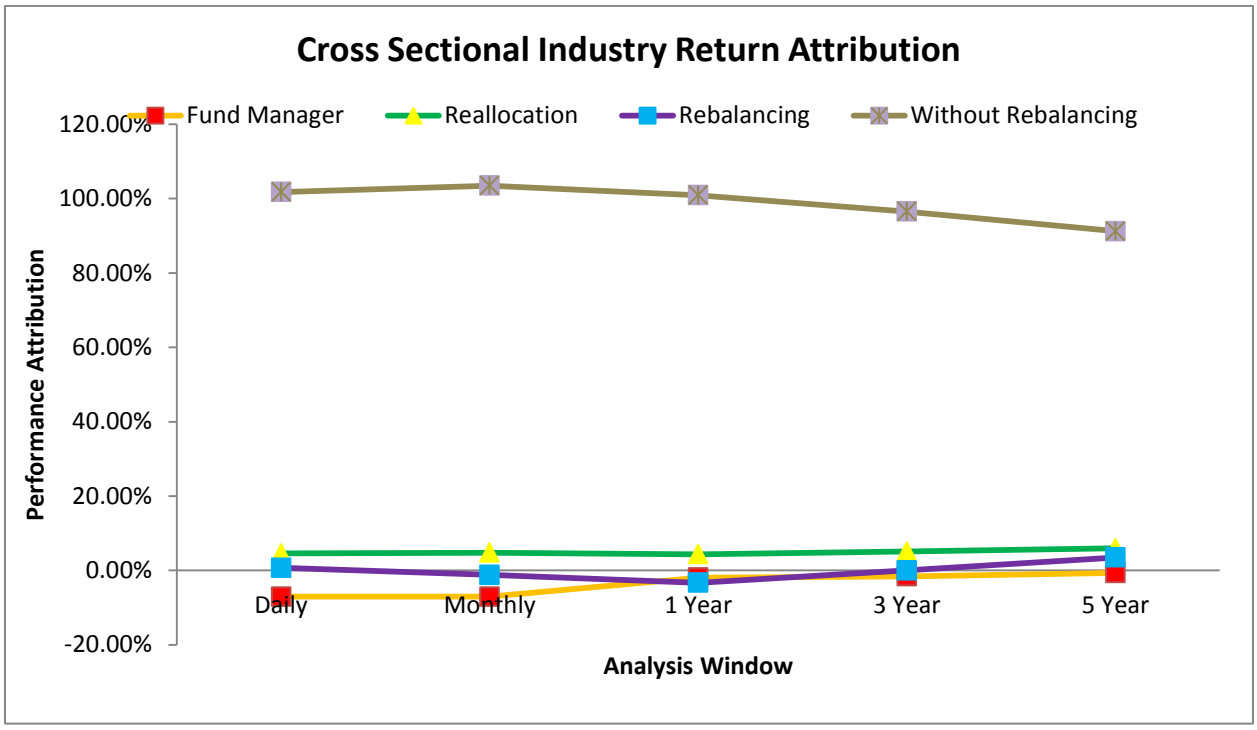
Fund managers

- in year 1, dip of 0.01% in return is observed and in 5 years it increases to 8.46%.

Rest of the details can be found in the table below:

Average across Industry Returns – Actual					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund	0.03%	0.65%	8.63%	8.41%	8.46%
Reallocation	0.03%	0.69%	8.64%	8.31%	8.20%
Rebalancing	0.03%	0.66%	8.25%	7.87%	7.70%
Without Rebalancing	0.03%	0.66%	8.54%	7.87%	7.41%

How does different strategy explain the fund returns over different time periods - Attribution



For MIPs we see policy allocation plays major role in explaining the returns.

Policy Allocation

- In 1 and 5 years, 100.90% and 91.25% of the returns are attributed to asset allocation.

Rebalancing

- in the long run does supplement the returns by 3.49%.

Market timing (reallocation)

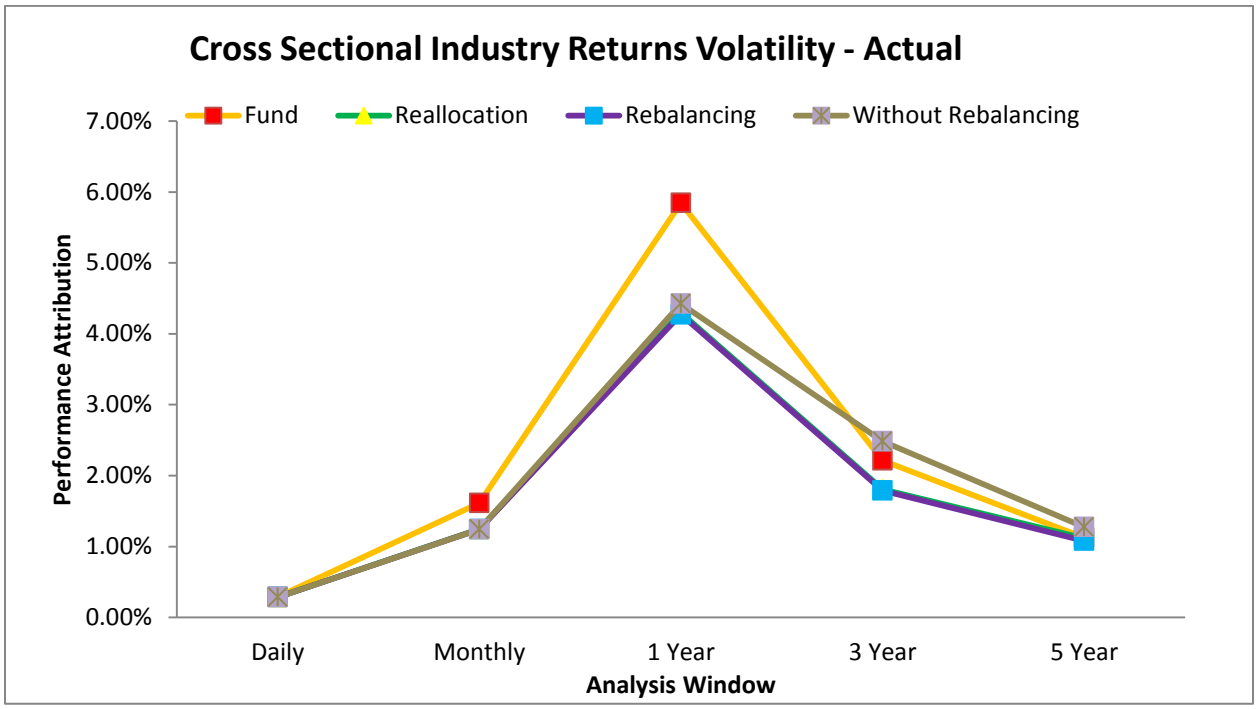
- is able to augment the fund performance from short to long term.
- in 1, 3 and 5 year it adds to the return by 4.32%, 5.06%, 5.94% respectively.

Fund Manager's stock selection on an average reduce the returns.

- In 1, 3 and 5 years manger reduces the return by -1.92%, -1.58% and -0.68%.
- Hence even in long fund managers are not able to augment the fund returns.

Average across Industry Returns – Attribution					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund Manager	-7.04%	-7.05%	-1.92%	-1.58%	-0.68%
Reallocation	4.57%	4.76%	4.32%	5.06%	5.94%
Rebalancing	0.69%	-1.21%	-3.31%	0.00%	3.49%
Without Rebalancing	101.79%	103.50%	100.90%	96.52%	91.25%

Importance of strategies in reducing volatility over time?

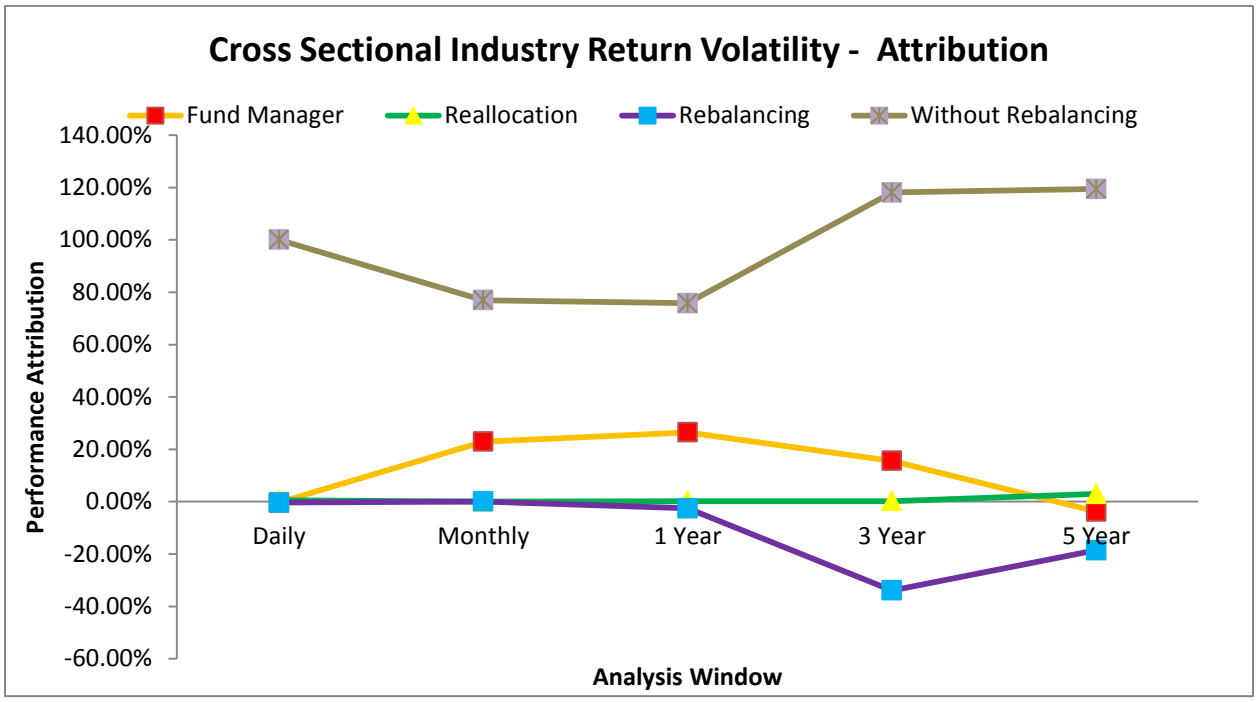


All the strategies put together are successful in reducing the volatility from 5.85% in year 1 to 1.13% in year 5.

Rest of the details can be found in the table below:

Average across Industry Std. Deviation - Actual					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund	0.29%	1.61%	5.85%	2.21%	1.13%
Reallocation	0.29%	1.24%	4.30%	1.80%	1.12%
Rebalancing	0.29%	1.24%	4.27%	1.79%	1.08%
Without Rebalancing	0.29%	1.24%	4.42%	2.48%	1.28%

Effect of various strategies on Volatility - Attribution



Policy allocation

- increases the volatility by more than 100% in 3 and 5 year time.

Reallocation

- Market timing irrespective of the analysis time period only increases the volatility component.

Fund Manager

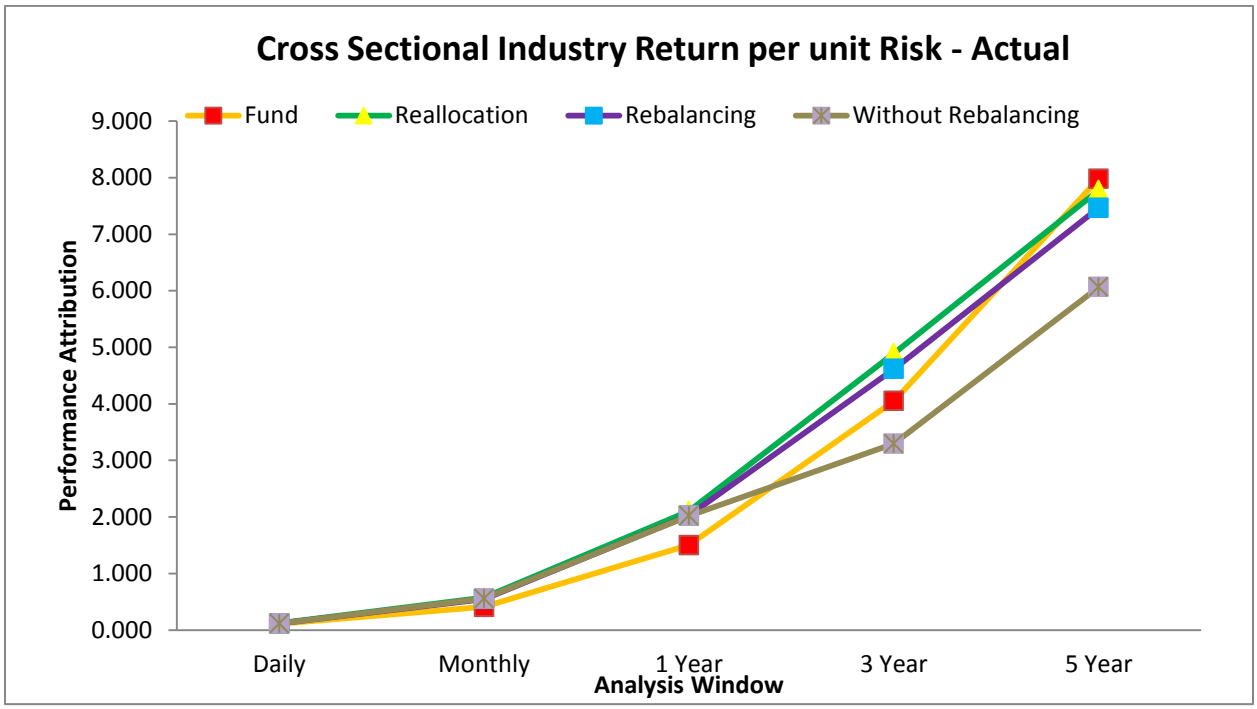
- add to the volatility component till 3 year.
- in 5 year window they help in reducing the fund return volatility by 3.79%.

Rebalancing is the only strategy which cuts down the risk by 33.91% and 18.56% in 3 and 5 year time horizon.

Rest of the details can be found in the table below:

Average across Industry Std. Deviation - Attribution					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund Manager	-0.36%	22.96%	26.50%	15.60%	-3.79%
Reallocation	0.60%	0.02%	0.23%	0.20%	2.93%
Rebalancing	-0.32%	0.07%	-2.56%	-33.91%	-18.56%
Without Rebalancing	100.08%	76.95%	75.83%	118.11%	119.42%

Importance of strategies in generating Return/Risk over time - Actual



Policy allocation

- over time it increases the return per unit risk from 201.93% to 606.39%.

Rebalancing

- over time it increases the ratio to 202.23%, over time increases it to 746.65%.

Reallocation

- adds to the return and takes the ratio to 210.23% from 202.23%
- over time increases it to 777.93% from 210.23%.

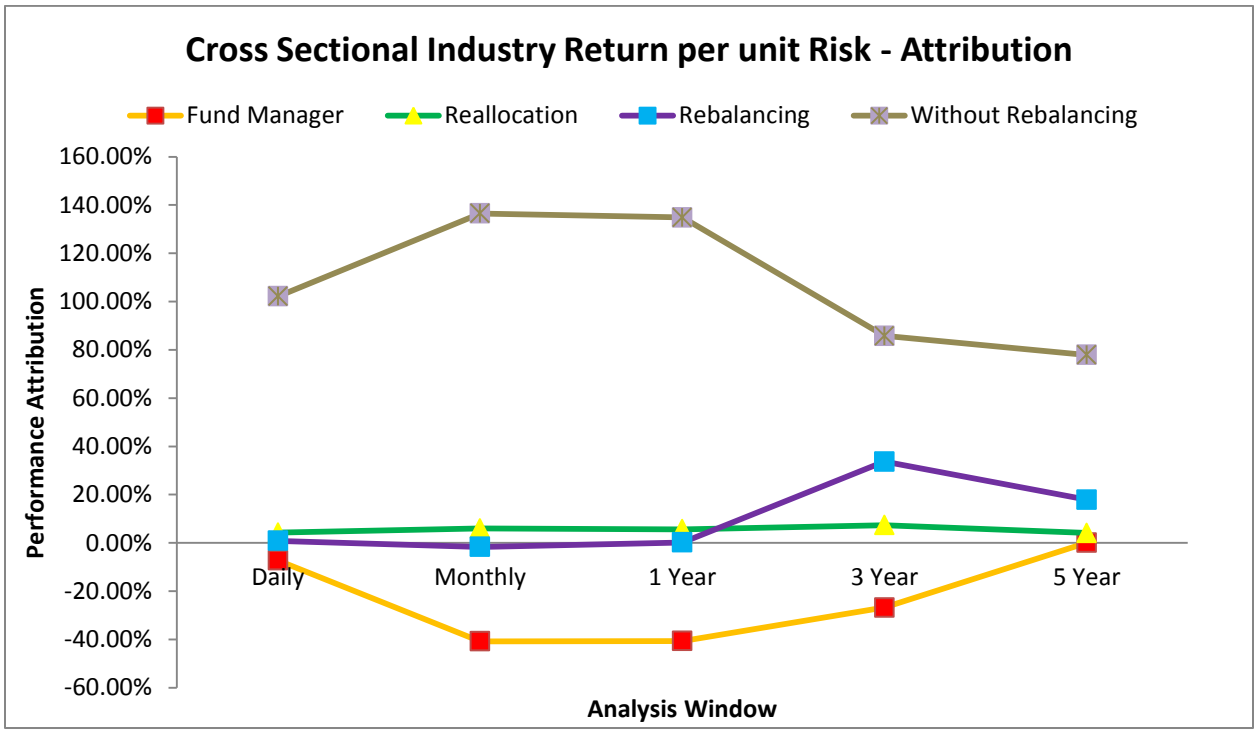
Fund manager is unable to pay off for the risk taken by her/him in 1and 3 year time period.

- ratio observes a steep decline to 150.04% however over time increases it to 798.15% from 777.93%.

Rest of the details can be found in the table below:

Average across Industry Return per unit Risk – Actual					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund	11.22%	40.87%	150.04%	405.16%	798.15%
Reallocation	11.91%	57.27%	210.48%	489.24%	777.93%
Rebalancing	11.46%	54.80%	202.23%	461.70%	746.65%
Without Rebalancing	11.35%	55.48%	201.93%	329.40%	606.39%

Effect of various strategies on Return per unit Risk - Attribution



Policy allocation gives the highest return for the risk taken.

- Return per unit risk changes from 134.87% in 1 year to 77.9% in 5 year.

Rebalancing

- in 3 years and 5 years it adds 33.65% and 17.92% to return for unit of risk taken.

Reallocation

- The risk taken by fund managers in market timing on an average adds in positive return.
- In medium term reallocation is able to add highest proportion to returns for the risk taken.

Fund Manager

- is unable to add to return for the risk she/he takes with sector and stock selection in 1 and 3 year time period.
- However in 5 year she/he adds in a mere 0.08%.

As seen before policy mandate helps in explaining returns and volatility the most. Hence it gives the highest return per unit risk among all the strategies across time periods under consideration.

Rest of the details can be found in the table below:

Average across Industry Return per unit Risk – Attribution					
Strategy	Daily	Monthly	1 Year	3 Year	5 Year
Fund Manager	-7.22%	-40.77%	-40.65%	-26.80%	0.08%
Reallocation	4.24%	5.93%	5.61%	7.34%	4.10%
Rebalancing	0.83%	-1.69%	0.17%	33.65%	17.92%
Without Rebalancing	102.15%	136.53%	134.87%	85.82%	77.90%

Fund Analysis based on the fund manager's performance

Fund Manager's play an important role in:

- Sector and Stock selection
- Market timing
- Rebalancing

Since rebalancing is a routine exercise and a non brainer hence we are not rewarding the fund for the same. Whereas fund manager's excellence comes into play during the other two, i.e. market timing, sector and stock selection. These two decisions amount to the maximum volatility experienced in the fund returns barring policy allocation (which just represents the policy goal). Hence using return per unit risk coefficient for reallocation and stock selection would gauge in the brilliance of the fund manager.

We give equal weightage to both market timing and stock selection. Further we give equal weightage to both 1 and 3 year return per unit risk coefficient, i.e. 33% each. For 5 year return per unit risk we give 34%. Based on these specifications we rank the balanced funds and MIPs.

Table below shows the results:

Balanced Funds	MIPs
HDFC Balance Fund	HDFC MIP LTP
HDFC Prudence Fund	UTI - Monthly Income Scheme
Tata Balance Fund	ICICI Pru - MIP Cumulative Reg
Birla SL - 95 Fund Reg (G)	Can Robeco - MIP Reg (G)
HDFC Child Gift Fund	HDFC MIP STP
DSP BR Balance Fund	Birla SL- Monthly Income Reg
Can Robeco - Balance Reg (G)	Birla SL - MIP Plan Reg (G)
ICICI Pru-Balanced Reg Plan	SBI Reg Saving Fund Ret
UTI - Balance Fund (G)	L&T - MIP (G)
Kotak – Balance	Kotak - Monthly Income Plan (G)
Principal - Balanced Fund (G)	Principal-Debt Saving MIP
ICICI Pru-Child Care Gift Plan	

Value research rates the funds on the basis of returns. Its 10 year ranking for various funds are as below:

Rank	Equity Fund
1	HDFC Prudence Fund
2	Tata Balanced Fund - Plan A
3	Canara Robeco Balance Fund - Regular Plan
4	Birla Sun Life 95 Fund
5	SBI Magnum Balanced Fund
6	HDFC Balanced Fund
7	HDFC Childrens Gift Fund - Investment Plan
8	Kotak Balance
9	ICICI Prudential Balanced Fund - Regular Plan
10	DSP BlackRock Balanced Fund
11	ICICI Prudential Child Care Plan - Gift Plan - Regular Plan
12	FT India Balanced Fund
13	ICICI Prudential Advisor Series - Long Term Savings Plan - Regular Plan
14	Principal Balanced Fund
15	Escorts Balanced Fund
16	UTI Balanced Fund
17	ING Balanced Fund
18	Sundaram Balanced Fund - Regular Plan
19	Baroda Pioneer Balance Fund
20	LIC Nomura MF Balanced Fund
21	JM Balanced Fund
22	LIC Nomura MF Unit Linked Insurance
23	UTI CCP Advantage Fund

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