

μ FAST The Ultimate Tool for Portfolio Tuning

*Mutual Fund Allocation & Selection
Tuner – Bazaar Analysis' Offer to
Futuristic Portfolio Managers*

In this document we have introduced an attribution based framework & tool which helps to tune a fund exposed to equity market with respect to benchmark (e.g., NIFTY, SENSEX, S&P 500 etc.). In order to keep the content simple and comprehensible in first look, we have avoided detailed descriptions

Agenda

- Introduction to Performance Attribution Analysis and Associated Artifacts
 - Allocation Effect
 - Selection Effect
 - Attribution
- Introduction to Athena (Our core platform)
- Introduction to SAFE (Attribution based tool for retails)
- μ FAST- The Ultimate Tool for Portfolio Tuning
- Summary

Introduction to Attribution Analysis

- Performance attribution is a quantitative approach to analysing the result of investment choices.
- Performance attribution determines how the portfolio manager's asset allocation and selection of securities affects the portfolio's performance when compared to a benchmark.
- Tuning of portfolio based on attribution analysis helps portfolio managers to keep the portfolio's performance near about or better than benchmark

Artifacts of Attribution

- Allocation Effect

Impact on performance of the portfolio due to allocation (fund to various sectors) decision.

- Selection Effect

Impact on performance of the portfolio due to selection of stocks from various sectors.

Allocation Effect

Good Allocation:

Portfolio has higher allocation than benchmark in sectors which have performed better than benchmark net performance.

Or

Portfolio has lower allocation than benchmark in sectors which have performed below benchmark net performance

Bad Allocation:

Portfolio has higher allocation than benchmark in sectors which have performed below benchmark net performance.

Or

Portfolio has lower allocation than benchmark in sectors which have performed better than benchmark net performance

Illustration: Allocation Effect

	Outperformed	Underperformed
Overweight	<p>+ Good Allocation</p>	<p>- Bad Allocation</p>
Underweight	<p>- Bad Allocation</p>	<p>+ Good Allocation</p>

Quantitative Measurement

Allocation Effect =

(Weightage of sector in portfolio – weightage of the sector in benchmark)

X

(Sector benchmark return – General benchmark return)

Example

	Allocation	
	Bench Mark	Portfolio
Sector A	30	25
Sector B	20	30
Sector C	25	20
Sector D	15	10
Sector E	10	15

	Performance	
	Bench Mark	Portfolio
Sector A	15	12
Sector B	14	17
Sector C	-8	-12
Sector D	-12	-5
Sector E	17	11
General Bench Mark	5.2	

		Allocation Effect
Sector A	$=(25 - 30) \times (15 - 5.2)$	-49
Sector B	$=(30 - 20) \times (14 - 5.2)$	88
Sector C	$=(20 - 25) \times (-8 - 5.2)$	66
Sector D	$=(10 - 15) \times (-12 - 5.2)$	86
Sector E	$=(15 - 10) \times (17 - 5.2)$	59

Selection Effect

Good Selection:

If portfolio sector return is better than the sector benchmark return.

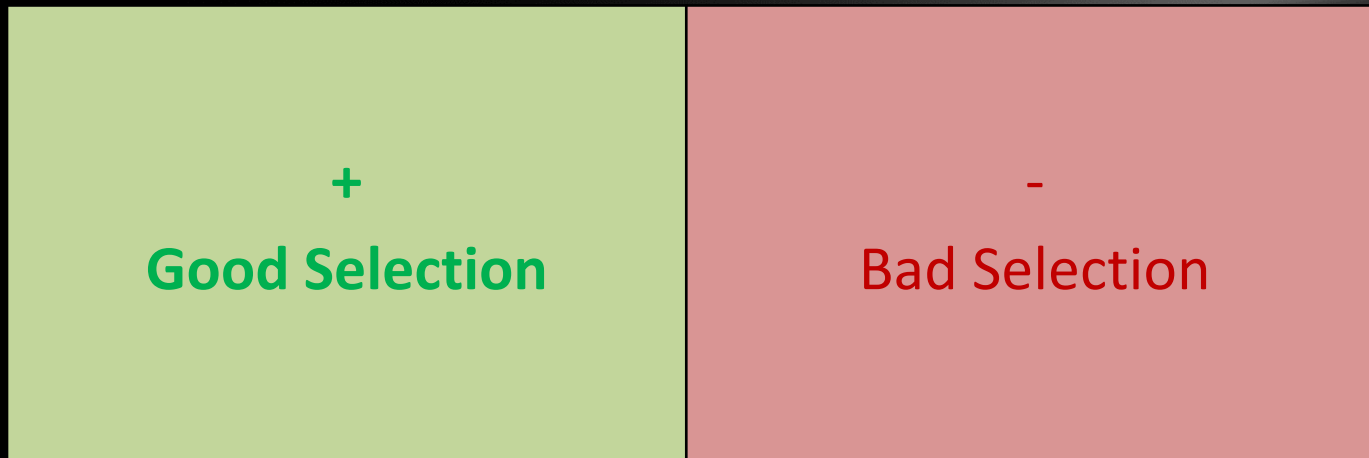
Bad Selection:

if portfolio sector return is below the sector benchmark return.

Illustration- Selection Effect

Portfolio Sector > Sector Benchmark

Portfolio Sector < Sector Benchmark



Quantitative Measurement

Selection Effect =

Sector Weight in Portfolio

X

(Sector return in portfolio – sector benchmark return)

Example

	Allocation	
	Bench Mark	Portfolio
Sector A	30	25
Sector B	20	30
Sector C	25	20
Sector D	15	10
Sector E	10	15

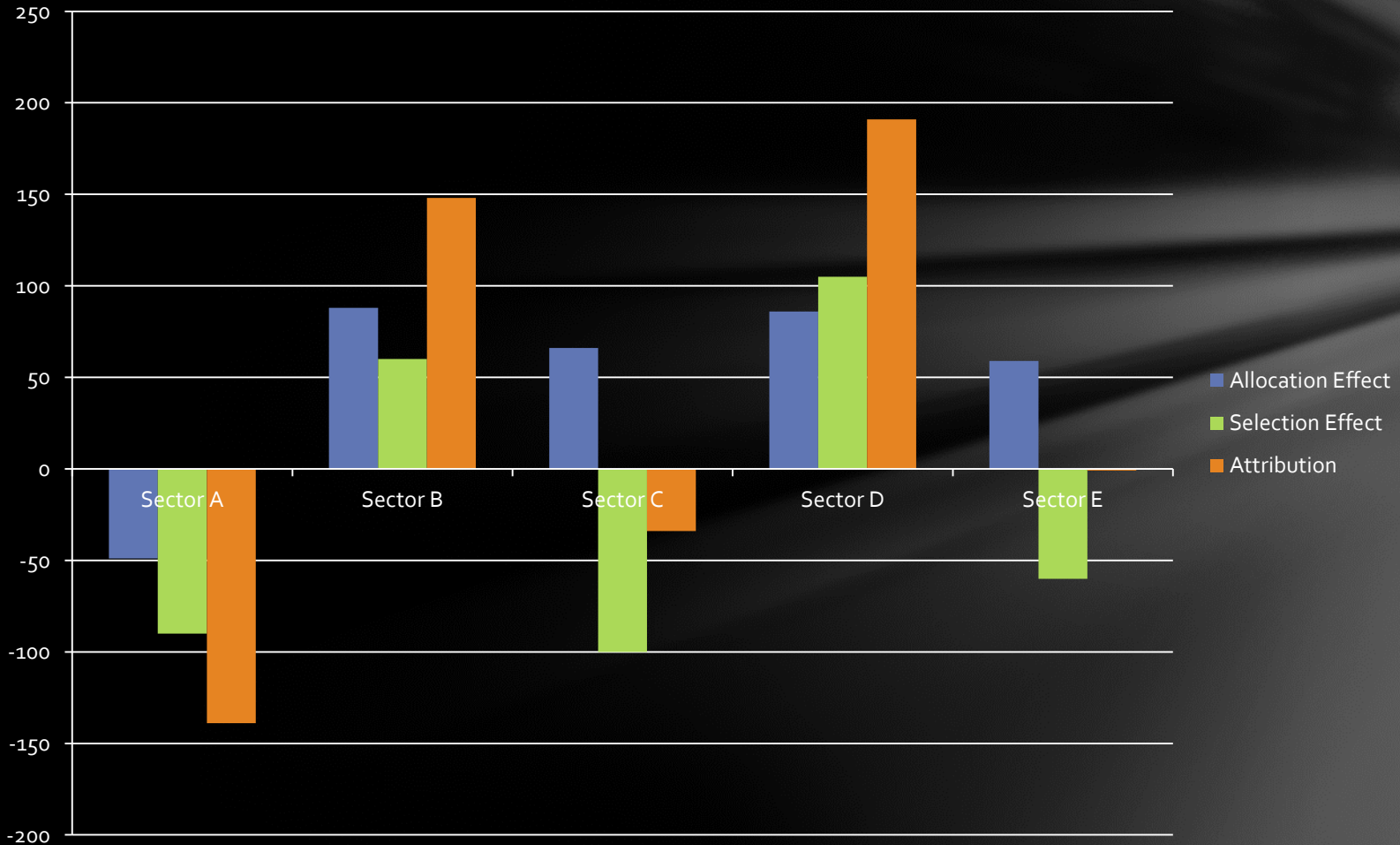
	Performance	
	Bench Mark	Portfolio
Sector A	15	12
Sector B	14	17
Sector C	-8	-12
Sector D	-12	-5
Sector E	17	11
General Bench Mark	5.2	

		Selection Effect
Sector A	=25 X (12 - 15)	-90
Sector B	=30 X (17 - 14)	60
Sector C	=20 X (-12 + 8)	-100
Sector D	=10 X (-5 + 12)	105
Sector E	=15 X (11 - 17)	-60

Net Attribute Effect

	Allocation Effect	Selection Effect	Attribution
Sector A	-49	-90	-139
Sector B	88	60	148
Sector C	66	-100	-34
Sector D	86	105	191
Sector E	59	-60	-1

Illustration



Introduction to **Athena**

Athena is our core platform for Analysis/ Analytics/ Algorithmic Trading. We have built our various products around this core platform

Please visit the following link for details

<http://www.BazaarAnalysis.com/Athena>

Products Around Athena

- **SMPS:** Stock Market PowerShell. This is a command line scripting environment based on Windows PowerShell. By help of scripts and this environment we automatically update our database and BazaarAnalysis website.
- **Athena Trade Space (ATS):** ATS is platform for auto-trading. This tool works in polymorphic way and simulates data service on demand with configurable speed. This way ATS helps in performing “True Simulation” for multiple stocks & strategies across multiple weeks of data.
- **SAFE (Stock Analysis for Everyone):** This is web based portfolio monitoring and tuning tool for retail investors. The service rolled out through this web site uses part of Attribution analysis.
- **μFAST (Mutual Fund Allocation & Selection Tuner):**

About SAFE

SAFE (Stock Analysis for Everyone) is web based set of tools to help retail investors. Under SAFE we have two functional tools:

- 1. Portfolio Builder:** This tool helps user to build a balanced portfolio. Essentially it takes care of allocation effect part of attribution analysis.
- 2. APS(Active Portfolio Service):** This part of the service generates periodic report and alerts. Users on basis of recommendation in the report trade in their respective trading accounts. Indirectly, it takes care of selection effect.

SAFE is for busy folks who have least interaction with the stock market but still have direct exposure in equity market. We have carved out the feature of attribution analysis for them in SAFE in such a way it should be least time consuming and best performance wise.

For more details please visit:

<http://www.SafeTrade.in>

The background of the top half of the slide is a dark, almost black, space filled with numerous bright, white, and greyish light rays or beams that originate from the right side and fan out towards the left, creating a sense of depth and movement.

μFAST

Dashboard

Period: Monthly ▼

	Allocation Effect	Selection Effect	Attribution	Action
Sector A	-49	-90	-139	Tune
Sector B	88	60	148	Tune
Sector C	66	-100	-34	Tune
Sector D	86	105	191	Tune
Sector E	59	-60	-1	Tune

Generate Action Report

Tuning Board (Allocation)

Allocation

Selection

Sector: SectorA

Current Allocation: 25%

Benchmark Allocation: 30%

Cash Available: 9%

Recommendation: Add 5%

Action:

Add



7

%

Save

Tuning Board (Selection)

Allocation







Selection

Sector: SectorA

Sector Allocation: 32%

Current Allocation: 24%

Modified Allocation: 32%

Stock	Current Holding	Add/Remove	New	Health
StockA1	2000	-1000	1000	
StockA2	12000	0	12000	
StockA3	17000	-7000	10000	
StockA4	1800	-1800	0	
StockA5	50000	30000	80000	
StockA6	0	20000	20000	

Save

- Recommendations:
1. Sell out StockA4
 2. Buy StockA6


Post Tuning Allocation/Selection

	Allocation	
	Bench Mark	Portfolio
Sector A	30	32(25)
Sector B	20	30
Sector C	25	14(20)
Sector D	15	7(10)
Sector E	10	15

	Performance	
	Bench Mark	Portfolio
Sector A	15	16(12)
Sector B	14	17
Sector C	-8	-5(-12)
Sector D	-12	-5
Sector E	17	14(11)
General Bench Mark	5.2	

Numbers in brackets are old values
(prior to tuning)

Dashboard (Post tuning)

Period: Monthly 

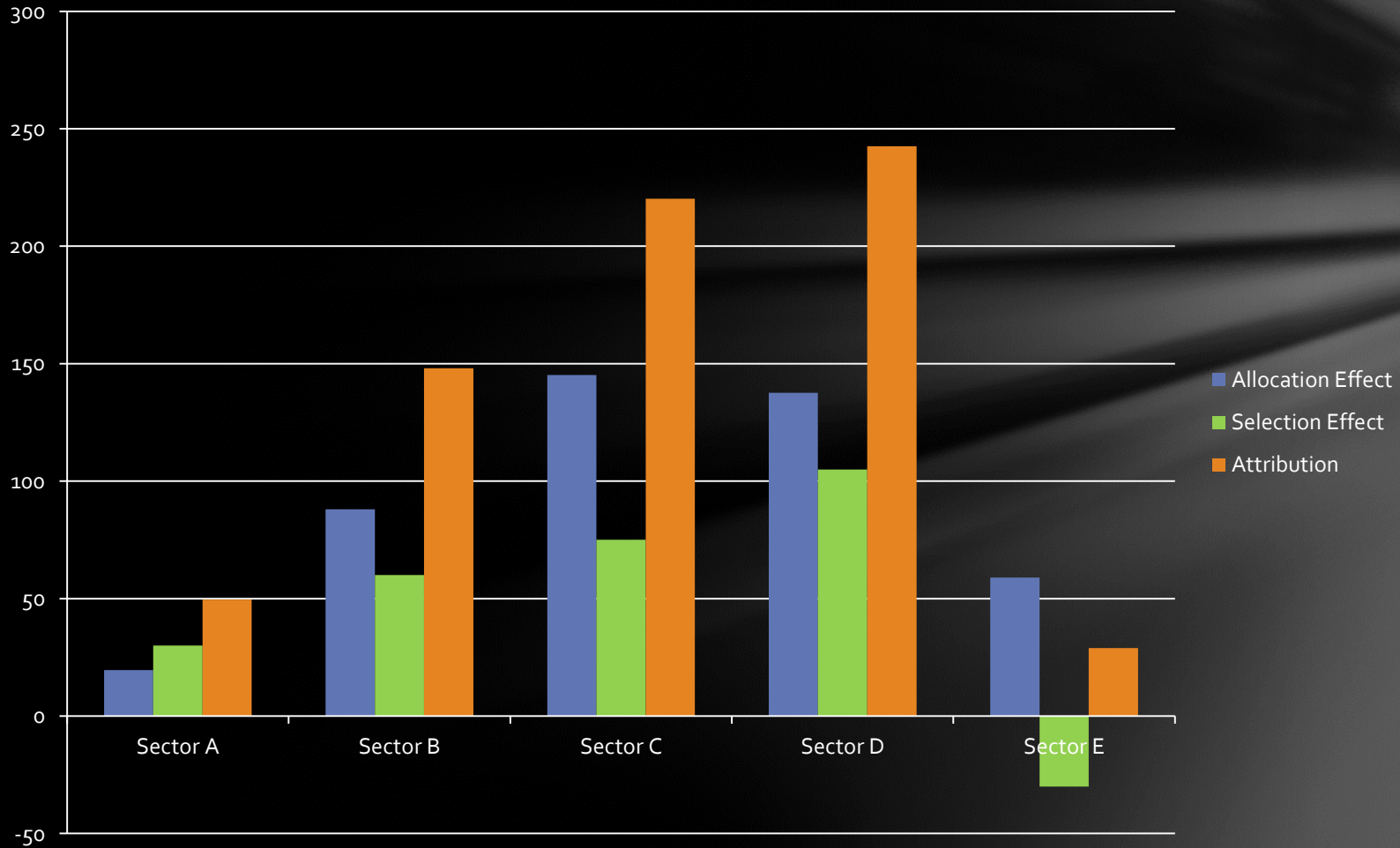
	Allocation Effect	Selection Effect	Attribution	Action
Sector A	19.6(-49)	30(-90)	49.6(-139)	Tune
Sector B	88	60	148	Tune
Sector C	145.2(66)	75(-100)	220.2(-34)	Tune
Sector D	137.6(86)	105	242.6(191)	Tune
Sector E	59	-30(-60)	29	Tune

[Generate Action Report](#)

Action Report

Stock	Action	Quantity
StockA1	Sell	1000
StockA3	Sell	7000
StockA4	Sell	1800
StockA5	Buy	30000
StockA6	Buy	20000
StockC1	Sell	700
StockC6	Sell	19000
StockD2	Sell	7000
StockE2	Buy	11000

Illustration



Summary

- Performance Attribution Analysis has decomposition based framework to analyze the performance against benchmark
- Periodic tuning of portfolio to make it compliant with Performance Attribution Analysis framework improves chances to perform near about or better than benchmark
- μ FAST is a tool which helps to visualize, tune, and generate action report based on Performance Attribution Analysis.

References

1. Allen, Gregory C., "Performance Attribution for Global Equity Portfolios," *Journal of Portfolio Management*, Fall 1991, pp. 159–165.
2. Frongello, A.S.B., "Attribution Linking: Proofed and Clarified," *Journal of Performance Management*, Fall 2002

Thank You!

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