CRISIL XPert

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Introduction

Investors expect active fund managers to beat benchmarks at all points of time. In a competitive environment today, asset managers need to meet these demands by taking minimal risks. While fund managers continuously pursue these objectives, at times markets do not behave the way they are expected to. It is important for fund managers to take corrective actions in their portfolios at these points of time. Understanding the reasons for the variability in performance is a critical input in this process. Performance Attribution is a technique which helps fund managers to understand the causes for these deviations. Under Performance Attribution for equity portfolios, the excess return (positive or negative) is explained through Sector allocation and Security selection strategies. In case of debt portfolios, the same is explained primarily through the Duration and Credit strategies taken by the fund managers.

CRISIL's Approach

Equity Attribution

CRISIL employs the Brinson- Fachler model for Attribution analysis. The model follows a Top-down investment approach. The model rewards or penalizes action by active fund managers depending upon their allocation to out-performers or under-performers.

The following diagram explains the analysis in a nutshell.

		Sector / security returns in Portfolio vs Benchmark	
		Positive	Negative
Sector / security allocation in Portfolio vs Benchmark	Overweight	+ve Outperformance	-ve Underperformance - Review allocation / selection
	Underweight	-ve Underperformance - Review allocation / selection	+ve Outperformance

Active fund managers' actions are judged on two parameters – 1) Sector Allocation 2) Security Selection skills.

Sector Allocation

The approach first identifies whether a specific sector is an out-performer or an under-performer within a benchmark. For assessing this, the returns of the sectors in the benchmark are compared against the total benchmark return. The next test is to see whether the fund manager is over-weighted or under-weighted on such out-performing or under-performing sectors. The fund manager is rewarded for - over-weighing out-performing sectors & under-weighing under-performing sectors. Similarly, the fund manager is penalized for - over-weighing under-performing sectors & under-weighing out-performing sectors.

The Allocation effect reflects the payoffs for allocation strategies of the fund manager, whereas the Selection effect reflects the security selection skills. The sectors circled in green are the ones with positive contribution & the ones circled in red are the ones with negative contribution.

Brinson Fachler Model - NIFTY V/s XYZ Opportunity - Between 30/May/2008 To 30/Jun/2008

	Sector Level Attribution				
	Portfolio Details		Attribution Effects		
Sector Name	Weighted returns in BM [%]	Weighted returns in AP [%]	Allocation [%]	Selection [%]	Final Effect [%]
Cash	0.0	0.0	1.3	0.0	1.3
Construction	-1.5	0.0	0.8	0.0	0.8
Telecommunication - Services	-2.4	-0.6	0.3	0.1	0.4
Aluminium	-0.7	0.0	0.3	0.0	0.3
Metals	-0.6	0.0	0.2	0.0	0.2
Automobiles - 2 And 3 Wheelers	-0.1	-0.3	0.2	-0.0	0.2
Banks	-2.0	-1.3	0.2	-0.0	0.2
Automobiles - 4 Wheelers	-0.5	0.0	0.1	0.0	0.1
Computers - Software	-1.8	-0.9	-0.2	0.3	0.1
Electrical Equipment	-1.2	-2.1	-0.2	0.3	0.1
Power	-1.5	-0.2	0.1	0.0	0.1
Cement And Cement Products	-0.3	0.0	0.0	0.0	0.0
Mining	0.0	-0.1	0.1	-0.1	0.0
Gas	-0.2	0.0	-0.0	0.0	-0.0
Personal Care	0.0	-0.1	0.1	-0.1	-0.0
Miscellaneous	0.0	-0.0	0.0	-0.0	-0.0
Transport	0.0	-0.1	0.1	-0.1	-0.0
Retail	0.0	-0.5	0.5	-0.5	-0.0
Media & Entertainment	-0.0	0.0	-0.0	0.0	-0.0
Diversified	-0.3	-0.1	-0.0	0.0	-0.0
Construction - Civil	0.0	-0.1	0.1	-0.1	-0.1
Cigarettes	-0.4	-0.1	-0.1	0.0	-0.1
Chemicals - Inorganic	0.0	-0.4	0.2	-0.4	-0.2
Plastic And Plastic Products	0.0	-0.9	0.6	-0.9	-0.3
Electronics - Industrial	0.0	-0.6	0.3	-0.6	-0.3
Steel And Steel Products	-0.8	-1.2	0.0	-0.3	-0.3
Pharmaceuticals	-0.0	-0.1	-0.3	-0.1	-0.3
Refineries	-1.8	-1.1	-0.4	-0.0	-0.4
Finance - Housing	-0.6	-2.3	-0.5	-0.0	-0.5
Petrochemicals	0.0	-1.1	0.5	-1.1	-0.6
Shipping	0.0	-1.3	0.6	-1.3	-0.7
Oil Exploration/Production	-0.5	-0.0	-1.0	0.0	-1.0
Engineering	-0.9	-5.4	-1.9	0.0	-1.8
	-18.2	-21.1	2.1	-5.1	-2.9
Difference in Returns =	-2.9	Allocation + Selection =	-2.9		

Security Selection

Selection skills are judged on the basis of the securities selected by the active fund manager and the allocation made to such securities within the sector. The approach first identifies whether a security is out-performing or under-performing sectors within the benchmark sector. The returns of the security in the benchmark are then compared against total benchmark sector returns. Then the next test is to see whether the fund manager is over-weighted or under-weighted on such out-performing or under-performing securities. The fund manager is rewarded for - over-weighing out-performing securities & under-weighing under-performing securities. Similarly, the fund manager is penalized for - over-weighing on an under-performing securities & under-weighing out-performing securities.

Brinson Fachler Model - NIFTY V/s XYZ Opportunity - Between 30/May/2008 To 30/Jun/2008

Security Name	Security Level Attribution				
	Portfolio Details				
	Price Returns [%]	Last day weights in Portfolio [%]	Weighted returns in BM [%]	Weighted returns in AP[%]	Selection [%]
Aluminium					
Hindalco Industries Ltd.	-26.0	0.0	-0.2	0.0	0.1
National Aluminium Co. Ltd.	-34.5	0.0	-0.4	0.0	0.2
Automobiles - 2 And 3 Wheelers					
Hero Honda Motors Ltd.	-8.6	2.9	-0.1	-0.3	0.2
Automobiles - 4 Wheelers					
Mahindra & Mahindra Ltd.	-18.1	0.0	-0.1	0.0	0.0
Maruti Suzuki India Ltd.	-19.2	0.0	-0.2	0.0	0.0
Tata Motors Ltd.	-26.1	0.0	-0.2	0.0	0.1
Banks					
Hdfc Bank Ltd.	-26.2	0.0	-0.5	0.0	0.2
Icici Bank Ltd.	-20.1	0.0	-0.7	0.0	0.1
Punjab National Bank	-22.4	0.0	-0.1	0.0	0.0
State Bank Of India	-23.0	4.8	-0.8	-1.3	0.1
Cash					
Net Receivables	0.2	8.2	0.0	0.0	1.3
Cement And Cement Products					
Acc Ltd.	-20.9	0.0	-0.1	0.0	0.0
Ambuja Cements Ltd.	-20.5	0.0	-0.1	0.0	0.0
Grasim Industries Ltd.	-16.8	0.0	-0.1	0.0	0.0
Chemicals - Inorganic					
Tata Chemicals Ltd.	-29.0	1.2	0.0	-0.4	0.2
Cigarettes					
I T C Ltd.	-14.1	0.8	-0.4	-0.1	0.1
Computers - Software					
Hcl Technologies Ltd.	-19.9	0.0	-0.1	0.0	0.0
Infosys Technologies Ltd.	-11.4	7.5	-0.5	-0.9	0.2
Satyam Computer Services Ltd.	-16.5	0.0	-0.2	0.0	0.0
Tata Consultancy Services Ltd.	-16.6	0.0	-0.6	0.0	0.0
Wipro Ltd.	-13.8	0.0	-0.4	0.0	0.1
Steel And Steel Products					
Adhunik Metaliks Ltd.	-24.3	0.6	0.0	-0.2	0.1
Kalyani Steels Ltd.	-32.6	0.7	0.0	-0.3	0.2
Steel Authority Of India Ltd.	-12.7	0.6	-0.3	-0.1	0.1
Tata Steel Ltd.	-19.3	3.1	-0.5	-0.6	0.0
Transport					
Deep Industries Ltd.	-18.4	0.6	0.0	-0.1	0.0
			18.2	21.1	5.1
Difference in Returns =	2.9	Allocation + Selection =	2.9		

Decision Support Reports

Name	Returns[%]
XYZ Opportunity Fund	-21.1
NIFTY	-18.2
Difference in returns	-2.9

Investment outside benchmark-High underperformance-Review sector selection					
Sector Name	**Portfolio Name**	**Weights[%]**	**Wtd Sector Returns[%]**	**Sector Returns[%]**	**Holding Value (Crores)**
PETROCHEMICALS	XYZ Opportunity	2.51	-1.14	-34.69	0.04
	NIFTY	0.00	0.00	0.00	0.00
SHIPPING	XYZ Opportunity	3.06	-1.31	-34.22	0.05
	NIFTY	0.00	0.00	0.00	0.00
ELECTRONICS - INDUSTRIAL	XYZ Opportunity	1.32	-0.61	-33.78	0.02
	NIFTY	0.00	0.00	0.00	0.00
CONSTRUCTION - CIVIL	XYZ Opportunity	0.25	-0.10	-30.55	0.00
	NIFTY	0.00	0.00	0.00	0.00
CHEMICALS - INORGANIC	XYZ Opportunity	1.24	-0.45	-27.63	0.02
	NIFTY	0.00	0.00	0.00	0.00
PLASTIC AND PLASTIC PRODUCTS	XYZ Opportunity	3.43	-0.93	-22.31	0.06
	NIFTY	0.00	0.00	0.00	0.00

Sector : SHIPPING							
Security	**Benchmark Stocks**		**Benchmark**			**Portfolio**	
Name	**Price Return[%]**	**Weight [%]**	**Wtd Returns [%]**	**Holding Value (Crores)**	**Weight [%]**	**Wtd Returns [%]**	**Holding Value (Crores)**
ABG Shipyard Ltd.	-38.92	0.00	0.00	0.00	1.45	-0.8	0.03
Great Eastern Shipping Co. Ltd	-26.38	0.00	0.00	0.00	1.61	-0.51	0.03

Sector : PETROCHEMICALS							
Security	**Benchmark Stocks**		**Benchmark**			**Portfolio**	
Name	**Price Return[%]**	**Weight [%]**	**Wtd Returns [%]**	**Holding Value (Crores)**	**Weight [%]**	**Wtd Returns [%]**	**Holding Value (Crores)**
Bombay Dyeing & Manufacturing Co. Ltd.	-34.55	0.00	0.00	0.00	2.51	-1.14	0.04

Allocation and Selection effects explain the excess or underperformance of the fund managers' portfolio, as the case may be, vis-à-vis the benchmark portfolio.

Debt Attribution

The source of returns for Fixed income fund managers differ from the ones for Equity fund managers. Unlike sector allocation and stock selection, debt fund managers are concerned primarily with duration and credit risks. It is therefore, pertinent for fixed income attribution models to consider these two critical factors.

CRISIL employs a factor based approach in its Debt attribution model. Under this model, the excess portfolio return is decomposed into Duration effect and Spread effect. The residual return is distributed as Allocation & Selection effect.

Computational Method

- **Excess Return -** The excess return is computed based on the weighted average return of each bond within the benchmark and the fund portfolio.
- **Bond Return -** Bond level return is calculated by summing up the return on the price and the accrued interest.
- **Duration Effect -** The yield differential between two periods multiplied by the duration of the bond.
- **Spread Effect -** The Spread (of bond over benchmark government securities) differential between two periods multiplied by the duration of the bond.

Features of CRISIL’s Performance Attribution Tool (CRISIL Xpert)

- Equity and Fixed income multi-period performance attribution.
- Asset level attribution for hybrid portfolios.
- Simulation features such as constant portfolios to assess the impact of portfolio churn and peer group performance
- Concentration and Contribution analysis through graphs and diagrams.
- Relevant risk ratios.
- Time charts for security performance.
- Management summary reports highlighting sectors/stocks with significant impact on portfolio performance.

Benefits

For Asset Management Companies

a) CRISIL Xpert facilitates constant monitoring of portfolio performance vis-à-vis benchmarks. It also identifies the causes for variability in performance and assists fund managers in the process of corrective action.

b) Fund managers can compare their own portfolios to the peer group for a better perspective of the market dynamics.

c) The MIS reports help fund managers in identifying sectors and securities that need attention.

d) Concentration analysis and Risk ratios, which are reports built into the CRISIL Xpert, assist fund managers and risk teams in identifying key risk factors, thereby assisting the Risk management process.

For Distributors

a) The reports provide a scientific explanation about the deviations in performance between various funds and their benchmarks.

b) The reports help in evaluating the skills of the fund manager in a scientific manner, which is a source of well informed advice to clients.

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