

JCR-VIS RATING METHODOLOGY

EXPLAINING THE STARS

JCR-VIS' introduction of "Star Rankings" in the Pakistan market in 2004 paved the way for meaningful analysis of performance of mutual funds. The Star Rankings are based on a pure quantitative model, comparing historical risk-adjusted returns of funds investing in largely the same asset class. This tool has been designed to enable investors to evaluate the past performance of a given fund in relation to its peer group¹.

The first step in this process is thus defining peer groups. JCR-VIS' categorization criteria is based on the fundamental principle that funds in a given peer group should be valid substitutes for one another; the difference in performance of funds would thus be a function of fund manager skill rather than external factors. Accordingly, at the most basic level, open-end funds are distinguished from closed-end funds due to their varying dynamics. Different categories of funds may also be created for different markets, such as domestic and international or as per their faith-based strategies such as conventional or Shari'a compliant investments. Furthermore, mutual funds are classified into various categories on the basis of their average asset allocation and the size of total assets under management over the performance period. Funds in any of the category may also be further sub-categorized based on their size. Cut off thresholds for this sub-categorization, however, varies from time-to-time with changes that occur in total size of the respective market.

When necessitated by changes in fund composition, JCR-VIS changes classification accordingly. Broad classifications include:

1. Stock Funds
2. Asset Allocation Funds
3. Balanced Funds
4. Income Funds
5. Money Market Funds

For ranking of funds, it is important to ensure that categories are appropriately populated. With growth in number of funds over time, most of the basic categories have become adequately populated; some having enough data points for sub-categorization as well. For instance, based on their style and portfolio composition, funds may also be categorized as conservative, moderate or aggressive. Funds specializing in specific types of issues may also be distinguished.

JCR-VIS continues to require a minimum of three funds per category operating for a minimum period of one year. There may still be some categories that feature less than desired number of funds to arrive at a full spread of rankings. This consideration at times necessitates 'clubbing together' of funds on a broader basis of asset class concentration in any fund. This consideration has also led to the development of hypothetical pools of funds, which may be readily replicated by investors. The objective remains provision of meaningful analysis of performance of funds, some of which may be unique in nature and may not have readily available substitutes currently in the market.

¹ It is important to note that while making an investment decision, other factors may also need to be considered as past performance does not provide assurance of future returns.

Calculation Methodology

Change in the fund's net asset value (NAV) during the performance review period is used to gauge the returns earned by the investor, assuming that the dividends earned during the period are reinvested in the fund. For open-end funds, returns are automatically adjusted for sales load by taking the offer and redemption prices at the start and end of the investment period, respectively. For closed-end funds, returns are based on NAV rather than secondary market prices of the funds.

JCR-VIS calculates a fund's total return for a given period as follows:

Beginning of Period		
P_b	Beginning of period NAV per unit; offer price in case of open-end fund	25.00
U_b	Total no. of Units held	10,000
V_b	Investment Value at beginning of period ($U_b \times P_b$)	250,000
At time i		
D_i	Per unit distribution at time i	1.25
N_i	NAV per unit for reinvestment at time i	22.50
	Additional Units ($U_b \times D_i$) / N_i	556
U_i	Total no. of Units held	10,556
V_i	Investment Value at time i ($U_i \times N_i$)	237,500
End of Period		
P_e	End of period NAV per unit; redemption price in case of open-end fund	27.50
U_e	Total no. of Units held	10,556
V_e	Investment Value at end of period ($U_e \times P_e$)	290,278
Total Return	$(V_e/V_b) - 1\%$	16.11%

Next, JCR-VIS adjusts the fund's return for the risk-free rate. Once the excess return of each fund has been calculated, the relative return is arrived at by comparing the return of an individual fund with the peer group average.

JCR-VIS fund performance rankings are based on risk adjusted performance. Traditional risk frameworks that rely on standard deviation generally assume that returns conform to a normal bell shaped curve. An underlying assumption of the normal curve is 'perfect symmetry' which implies that the frequency and magnitude of upside price movements are considered just as "risky" as downside movements. Consequently, traditional models treat all uncertainty as risk, regardless of direction. In the practical world, investors worry more about their losses as they are generally risk-averse. For this very reason, JCR-VIS emphasizes downside risk when calculating the risk-adjusted returns.

For arriving at the risk measure, JCR-VIS calculates monthly downside deviation relative to the risk free rate. An average of all monthly negative returns for the full period under consideration gives the downside risk score of each fund. Akin to the calculation of relative return, the relative risk measure of each fund is a result of an individual fund's risk score compared to the peer average.

Changes in NAV are expected to reflect concentration related risks that the fund may be exposed to. However, changes in counterparty risk may not be reflected in prices unless tracked over a long period of time and even then, only prices of listed investments may satisfactorily reflect adjustments to counterparty risk. Therefore, adjustment for varying level of credit risk in case of income funds is made to the score.

The Outcome

A minimum performance history of 1 year is required for funds to become eligible for ranking.

JCR-VIS rankings are assigned as per the distribution below; the greater the number of funds in a category, the ranking distribution will more closely approximate a bell curve:



Top 10 and bottom 10 percentiles of the overall scores are assigned rankings of MFR-5(s) and MFR-1(s) respectively, while the middle 35 percentile is assigned MFR-3(s) rank. The remaining 22.5 percent on the upper and lower side are assigned MFR-4(s) and MFR-2(s) rank, respectively.

JCR-VIS calculates fund performance rankings for the one-, two-, three-, and five-year periods with different weights assigned to sub-periods. However, 2-year ranking is only published in cases where a fund has not completed 3 years of operations.

The weights assigned to rankings of different periods are:

Ranking Horizon	Weights
1-year	100% 1-year ranking
2-year	60% 2-year ranking
	40% 1-year ranking
3-year	50% 3-year ranking
	30% 2-year ranking
	20% 1-year ranking
5-year	50% 5-year ranking
	30% 3-year ranking
	20% 1-year ranking

Unsolicited Ranking

In order to provide useful benchmarks to market participants, JCR-VIS may also announce unsolicited performance rankings for other market players as well. These will be based on the following scale:

- Top 22.5% - High Rank**
- Next 55% - Medium Rank**
- Last 22.5% - Low Rank**

**Faheem Ahmad***President & CEO, JCR-VIS Credit Rating Company Limited**Founder, VIS Group**Chairman, Association of Credit Rating Agencies in Asia*

Mr. Ahmad possesses 30+ years experience in financial risk assessment with focus on Islamic finance, venture capital and general management. He has top level management experience at international level in the fields of credit ratings, Islamic and conventional financial risk assessment modeling, industrial management and construction engineering. Mr. Ahmad is an active participant at international forums on Credit Ratings. He obtained his B.S in Civil Engineering from NED University of Engineering and Technology, Karachi. He also has Masters Degrees in Engineering and Business Administration from USA. He could be contacted at faheem@jcrvis.com.pk

**M. Bilal Aftab***Director Compliance & Rating Analytics*

Bilal joined VIS-Group at its inception and has since been engaged in most research and development ventures undertaken by the group companies. Prior to joining JCR-VIS, he had been engaged with other VIS Group companies in different capacities. Bilal was also a key resource in coordinating and developing the methodology for 'Mapping National Scale Ratings across Sovereigns in Asia', which was spearheaded by the CEO, JCR-VIS. His career spans over 25 years and includes work experience in the Middle East and local stock market brokerage houses. He holds an MBA degree and has also completed various courses in Economics and Investment Analysis and Data Science

Jahangir Kothari Parade (Lady LLOYD Pier)
Inspired by Her Excellency, The Honorable Lady Lloyd, this promenade pier and pavillion was constructed at a cost of 3 Lakhs and donated to the public of Karachi by Jahangir Kothari to whose genrosity and public spirit the gift is due. Foundation stone laid on January 5, 1920. Opened by Her Excellency, The Honorable Lady Lloyd on March 21, 1921.

Dome: A roof or vault, usually hemispherical in form. Until the 19th century, domes were constructed of masonry, of wood, or of combinations of the two, frequently reinforced with iron chains around the base to counteract the outward thrust of the structure.

Origins: The dome seems to have developed as roofing for circular mud-brick huts in ancient Mesopotamia about 6000 years ago. In the 14th century B.C. the Mycenaean Greeks built tombs roofed with steep corbeled domes in the shape of pointed beehives (tholos tombs). Otherwise, the dome was not important in ancient Greek architecture. The Romans developed the masonry dome in its purest form, culminating in a temple built by the emperor Hadrian. Set on a massive circular drum the coffered dome forms a perfect hemisphere on the interior, with a large oculus (eye) in its center to admit light.



Jahangir Kothari Parade

National Excellence, International Reach

JCR-VIS Credit Rating Company Limited is committed to the protection of investors and offers a blend of local expertise and international experience to serve

the domestic financial markets. With its international reach, JCR-VIS is positioned to aim for an international mark. In this regard, the global experience of our principal, Japan Credit Rating Agency, Ltd. has been invaluable towards adding depth to our ongoing research endeavors, enriching us in ways, that enable us to deliver our responsibilities to the satisfaction of all investors.

The edifice of the Jahangir Kothari Parade has stood proudly through the years and is a symbol of our heritage. Its 'Dome' as the most stable of building structures, exemplifies architectural perfection. Committed to excellence, JCR-VIS continues its endeavor to remain an emblem of trust.

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