FUNDATA

Fundata Risk Ratings
Canadian Hedge Funds

fundata.com

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Hedge funds are specialized investment vehicles with unique strategies and risk profiles. While acknowledging that there are multiple risk measures that can reasonably be applied to hedge funds, Fundata's Canadian Hedge Fund risk ratings were developed using a set of quantitative, all-encompassing measures with large breadth of available data.

The ratings measure the risk of holding a particular hedge fund and do not attempt to assess how the fund might interact with other investments, asset classes or markets. More specifically, the ratings do not take into account correlation, diversification, or other factors that could affect the risk level of an investors overall portfolio. This is consistent with the risk ratings currently being assigned to mutual funds, ETFs, and segregated funds. While Fundata acknowledges that assets with low correlation can decrease the volatility of an otherwise diversified portfolio, this type of analysis should be done at the portfolio level by investors or their financial advisors.

Four risk measures met the criteria for wide market acceptance and breadth of data: **Maximum Drawdown**, **Standard Deviation**, **Up/Down Capture**, and **Batting Average**. A standard **Alternative Investments Premium** is also applied to account for other risks that may be unique to hedge funds such as liquidity risk, transparency risk, strategic risk and regulatory risk. A score from 1 to 5 is calculated for each risk measure, and the average is then taken to arrive at a final rating according to a five-point scale.

Methodology:

Performance History:

Regulation for retail investment products requires the use of 10 years of performance history in determining the risk rating. Fundata chose to use the same historical requirements for the hedge fund risk ratings. Funds with less than 10 years of history will be supplemented with proxy data.

Proxy Data:

Proxy data is chosen based on the investment strategy of the hedge fund. Funds are assigned to a category, where each category has an associated index. The associated index data is then used to fill in the history for the hedge fund. The categories and associated indices are as follows:

Category	Associated Index
Equity Focused	**Scotiabank Canadian Hedge Fund Equity Hedge Index EW**
Credit Focused	**Scotiabank Canadian Hedge Fund Fixed Income Index EW**
Market Neutral	**Scotiabank Canadian Hedge Fund Equity Market Neutral Index EW**
Global Macro	**Scotiabank Canadian Hedge Fund Global Macro Index EW**
Managed Futures	**Scotiabank Canadian Hedge Fund CTA Index EW**
Multi-Strategy	**Scotiabank Canadian Hedge Fund Multi-Strat Index EW**

Risk Measures:

Four quantitative risk measures are considered in the final rating as well as an Alternative Investments Premium that is applied equally to all hedge funds. Descriptions of the risk measures can be found in Appendix A.

Maximum Drawdown (MaxDD)

Funds with the highest MaxDD are considered highest risk.

1. The 1, 3, 5, and 10 year MaxDD are calculated for each fund and for each index.
2. The 20th, 40th, 60th, and 80th percentiles are calculated for the index universe for each of the time periods above.
3. For each time period, if the MaxDD of the fund is less than the 20th percentile, a score of 5 (High) is assigned. If the MaxDD is between the 20th and 40th percentile, a score of 4 (Medium to High) is assigned, and so on. The following table depicts the thresholds and corresponding ratings:

Score	Percentile
1	MaxDD > 80th
2	60th < MaxDD < 80th
3	40th < MaxDD < 60th
4	20th < MaxDD < 40th
5	MaxDD < 20th

4. The average of the scores across the four time periods is then calculated to determine the final MaxDD score for each fund.

Standard Deviation (SD)

Funds with the highest SD are considered highest risk.

1. The 1, 3, 5, and 10 year annualized SDs are calculated for each fund. .
2. The SD for each time period is ranked according to the following thresholds*:

Score	SD Range
1	SD < 6%
2	6% < SD < 11%
3	11% < SD < 16%
4	16% < SD < 20%
5	SD > 20%

3. The average of the scores across the four time periods is then calculated to determine the final SD score for each fund.

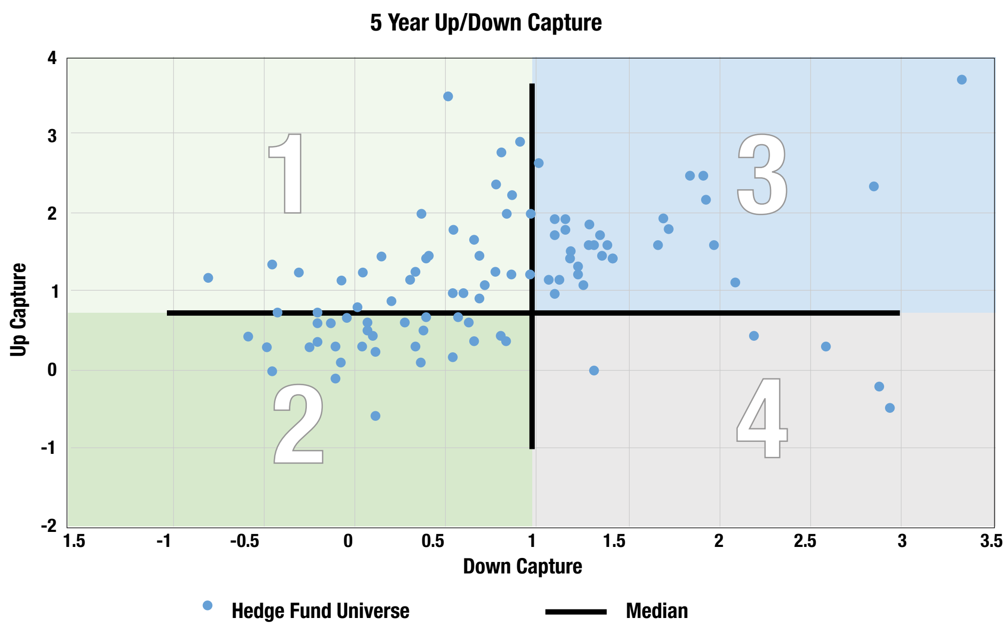
* The thresholds were chosen to be consistent with the regulatory requirements applied to retail mutual funds and ETFs.

Up/Down Capture (UD)

Funds with the highest down capture and lowest up capture are considered highest risk.

1. The Up Capture and Down Capture ratios are calculated for each fund over 1, 3, 5, and 10 year periods.
2. The universe medians are calculated for each time period.
3. For each fund over each time period:
   - If the Up Capture is greater than the median and the Down Capture is less than the median, a score of 1 is assigned
   - If the Up Capture is less than the median and the Down Capture is less than the median, a score of 2 is assigned
   - If the Up Capture is greater than the median and the Down Capture is greater than the median, a score of 3 is assigned
   - If the Up Capture is less than the median and the Down Capture is greater than the median, a score of 4 is assigned

The following scatter plot depicts how the scores are assigned for each time period:



4. The average of the scores across the four time periods is calculated and converted to a five-point scale to determine the final Up/Down Capture score for each fund.

Batting Average (BA)

Funds with the lowest batting average are considered highest risk.

1. The Batting Averages are calculated for each fund over 1, 3, 5, and 10 year periods.
2. For each fund over each time period, the following thresholds determine the scores:
   - If the BA is greater than 75%, a score of 1 is assigned
   - If the BA is greater than 50% and less than 75%, a score of 2 is assigned
   - If the BA is greater than 25% and less than 50%, a score of 3 is assigned
   - If the BA is less than 25%, a score of 4 is assigned
3. The average of the scores across the four time periods is calculated and converted to a five-point scale to determine the final Batting Average score for each fund

Alternative Investments Premium

An Alternative Investments Premium rating of 5 is applied to each fund to account for risks that are, in general, more prevalent in hedge funds compared to retail investment funds. These include:

- **Liquidity Risk:** This is the risk of loss due to the inability to sell an asset quickly enough to prevent or minimize losses. This risk is prevalent in hedge funds due to infrequent valuations and redemption periods as well as redemption provisions or clauses such as lock-out periods, gates, redemption notices, redemption suspensions, etc. Liquidity risk also relates to the liquidity of the underlying securities held by the fund. Hedge funds are allowed to hold a greater proportion of 'illiquid assets' compared to retail funds.
- **Transparency Risk:** This is the risk that investors do not fully understand what the hedge fund is holding or what they are exposed to. Retail investment funds are required to produce easy to understand documents called Fund Facts that contain top 10 holdings and allocations, as well as information related to fees, performance, etc. They are also required to file a Simplified Prospectus and MRFP, as well as publish full portfolio holdings. Hedge funds do not usually report this type of detail related to their holdings, exposures and strategies.
- **Strategic Risk:** Hedge funds can use a wide range of alternative strategies and because of this their performance tends to be less correlated with general market movements. While this may be viewed as a positive when taken in the context of an investors overall portfolio, these strategies can add to the riskiness of a specific investment when viewed as a standalone product. Examples of strategic risk could include highly concentrated positions, high leverage and large short positions.
- **Regulatory Risk:** Hedge funds are less regulated than retail investment funds when it relates to restrictions on strategies, position limits, and disclosure requirements around holdings, performance, fees and risk. Hedge funds are not required to file a simplified prospectus, release MRFPs, or produce Fund Funds documents.

Final Rating

The final rating is determined by taking the average, rounded up, of the five ratings for each hedge fund. Due to the risk premium, a fund cannot achieve a low risk rating overall, but can achieve a low rating in any of the four risk measures.

1 LOW	2 LOW TO MEDIUM	3 MEDIUM	4 MEDIUM TO HIGH	5 HIGH

Example

Fund XYZ

MEASURE	RATING
MAXIMUM DRAWDOWN	3
STANDARD DEVIATION	4
UP/DOWN CAPTURE	3
BATTING AVERAGE	4
ALTERNATIVE INVESTMENTS PREMIUM	5
Average	**3.8**
RISK RATING	**MEDIUM TO HIGH**

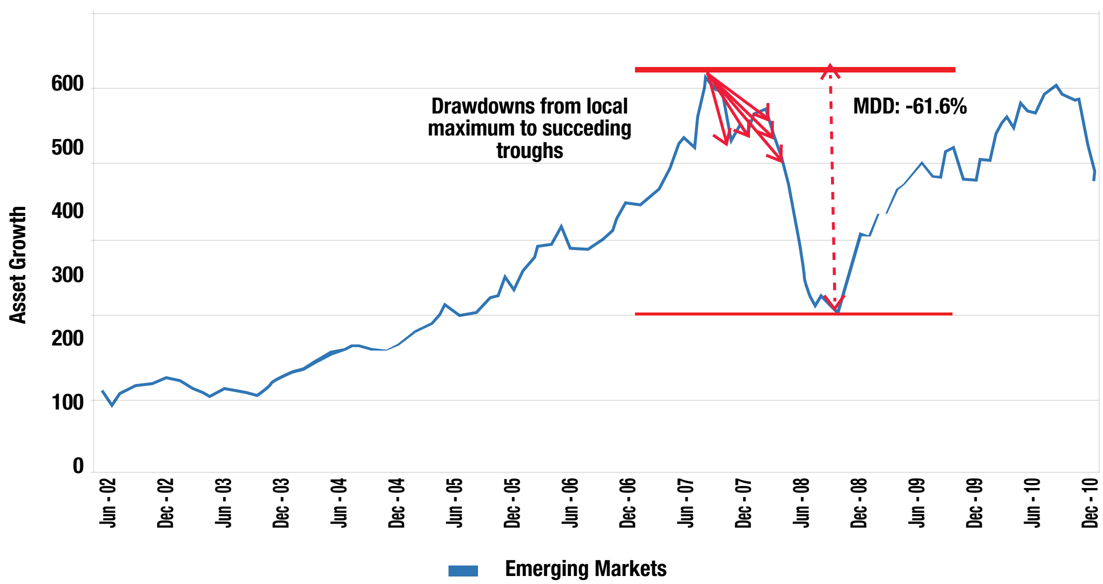
Risk Measures:

Maximum Drawdown (MaxDD):

Drawdown measures the percentage lost from the peak of an investment's value to the trough or the low point of the investment's value during any given time frame. The **Maximum Drawdown** is the largest percentage peak-to-trough decline during the time frame.

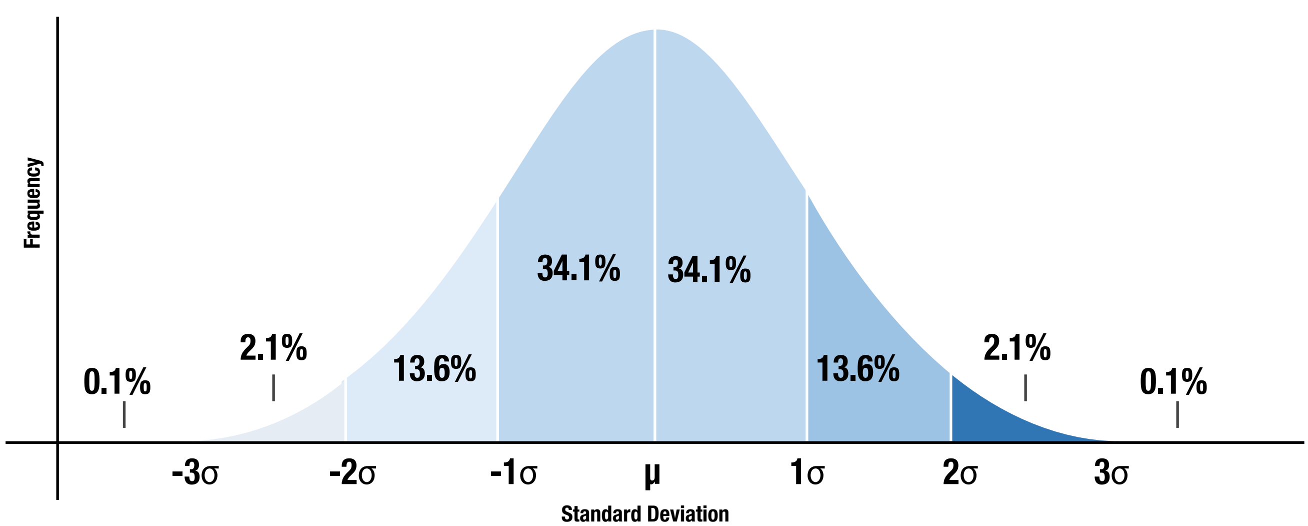
MaxDD is a good representation of how a fund reacted to previous market declines. It can be used as a relative measure against its peers, and provides some insight into the effectiveness of the manager's risk mitigation techniques and loss prevention strategies.

Emerging Markets Total Return Performance



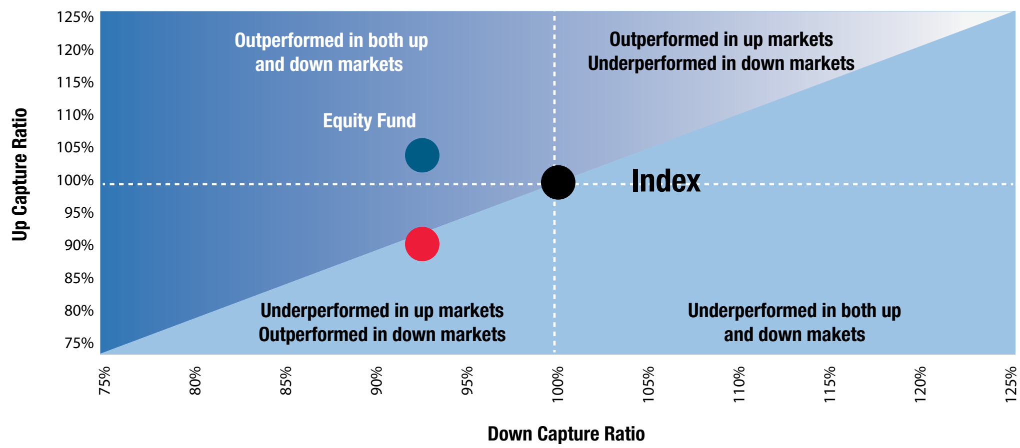
Standard Deviation (SD):

Standard deviation is the most widely accepted and easily understood measure of volatility risk. By measuring the amount that a fund's returns deviate from its mean return, standard deviation gives the investor an idea of the range in value that can be expected for their investment. Standard deviation is a risk measure that allows for easy, relevant comparisons across peer groups.



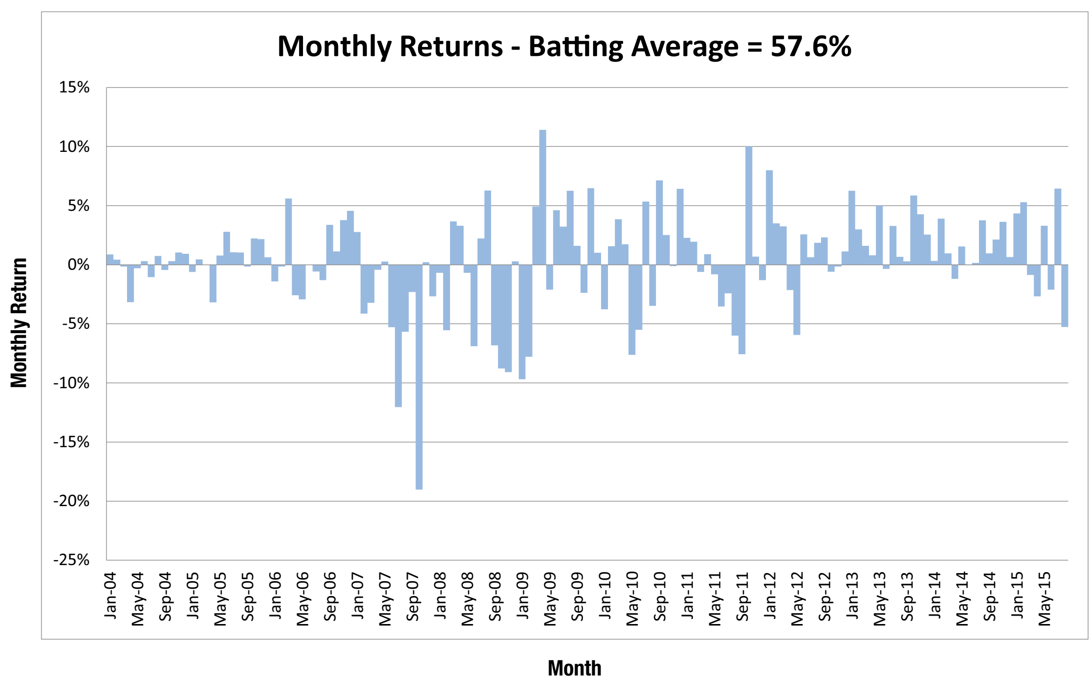
Up/Down Capture (UD):

Up Capture indicates how well a fund performed when the market was up – if the Up Capture is greater than 1, it means that the fund outperformed the market when the market was up. Conversely, Down Capture measures how well the fund performed when the market was down – a Down Capture greater than 1 means that the fund has underperformed the market during periods when the market was down. Up/Down Capture is a good indication of how the fund manager captures profits to the greatest extent possible while implementing effective risk mitigation techniques.



Batting Average (BA):

Batting Average is a quantitative measure that shows how frequently the fund manager produces a positive return. A Batting Average greater than 50% means that the manager has produced a return greater than zero in more than half the performance periods. When considered with compound returns, the Batting Average indicates whether or not the fund manager is consistent with performance (high Batting Average and high returns) or if positive returns are the result of just one or two periods of excellent return (low Batting Average with high returns).



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