



Fundata Risk Ratings: Canadian Alternative Investment Funds

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Fundata Risk Ratings

Canadian Alternative Investment Funds

Alternative investment 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 alternative funds, Fundata's Canadian Alternative Investment Funds 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 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 score from 1 to 5 is calculated for each risk measure, and the average is taken to arrive at a rating according to a five-point scale. A **Liquidity Score** was created in partnership with Sigma Analysis, to account for the added liquidity risk that normally comes with alternative investment funds. The liquidity score ranges from 0 to 1, and is added to the average score from the other four measures resulting in a final risk rating from 1 to 5. The maximum score is 5, representing High Risk.

Methodology

Performance History

Regulation for retail investment products requires the use of 10 years of performance history in determining the risk rating. When the fund does not have 10 years of data, proxy data is used. Fundata chose to use the same historical requirements for the alternative investment 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 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 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 performance driven metrics as well as a liquidity score are calculated in order to arrive at a final risk rating. 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:
4. The average of the scores across the four time periods is then calculated to determine the final MaxDD score for each fund.

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

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

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

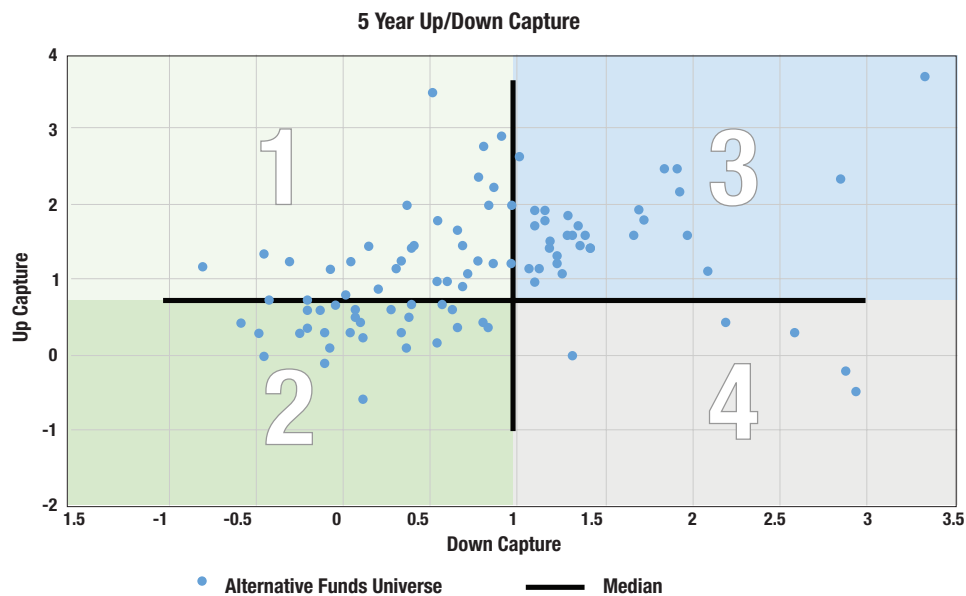
* The thresholds were chosen to be consistent with the regulatory requirements applied to retail mutual funds and ETFs.

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

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.

Liquidity Score

The Liquidity Score was developed in partnership with Sigma Analysis. There are 5 metrics used to determine the liquidity score: **Redemption Frequency**, **Redemption Notice**, **Early Redemption Cost**, **Suspensions**, **Gates**. These metrics were chosen based primarily on relevance and availability of data.

- **Redemption Frequency:** Redemption frequency refers to how often and when an investor can redeem their units. Generally, investors are allowed to redeem either daily, weekly, monthly, quarterly or semi-annually. A Redemption Frequency score from 1 to 5 is given such that the more frequent redemptions can be, the lower the score. For example, a fund that allows daily redemptions would receive a score of 1.
- **Redemption Notice:** The Redemption Notice determines how far in advance the investor must state their intent to withdraw funds. This can range from 0 to 180 days. A Redemption Notice Score from 1 to 5 is given such that the shorter the required redemption notice, the lower the score. For example, a fund that does not have a required redemption notice would receive a score of 1.
- **Early Redemption Cost:** Early Redemption Cost refers to any fees that are associated with the redemption of assets within a specified period. The fees generally range from 0 to 10%. An Early Redemption Cost score from 1 to 5 is given such that the lower the costs associated with early redemption, the lower the score. A fund with no early redemption fees would receive a score of 1.
- **Suspensions:** A Suspension refers to the fund manager's ability to prevent withdrawals from the fund at any time. The Suspension score is either 1 or 5, where any investment fund that has the ability to implement a suspension is given a 5.
- **Gates:** A Gate provision allows the fund manager to limit the amount that can be withdrawn from the fund at a specified time. Gates typically range from 10% to 30%. The Gate score is either a 1 or 5, where a fund with no gate provision is given a 1 and a fund with any gate provision is given a 5. Where no data is available, the score is a 3.

The five metrics are combined using the following weighted average:

Metric	Weight
Redemption Frequency	45%
Redemption Notice	30%
Early Redemption Cost	10%
Suspensions	5%
Gates	10%

The result is a score that ranges between 1 and 5, to which a uniform transformation is applied to arrive at a liquidity score between 0 and 1.

Final Rating

The final rating is determined by taking the average of the four risk measures and adding the liquidity score and rounding up. The maximum overall score is a 5, representing a High risk rating.

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

Fund XYZ	MEASURE	RATING
	MAXIMUM DRAWDOWN	3
	STANDARD DEVIATION	4
	UP/DOWN CAPTURE	3
	BATTING AVERAGE	4
	AVERAGE	3.5
	LIQUIDITY SCORE	0.41
	Final Rating	3.91
RISK RATING	MEDIUM TO HIGH	

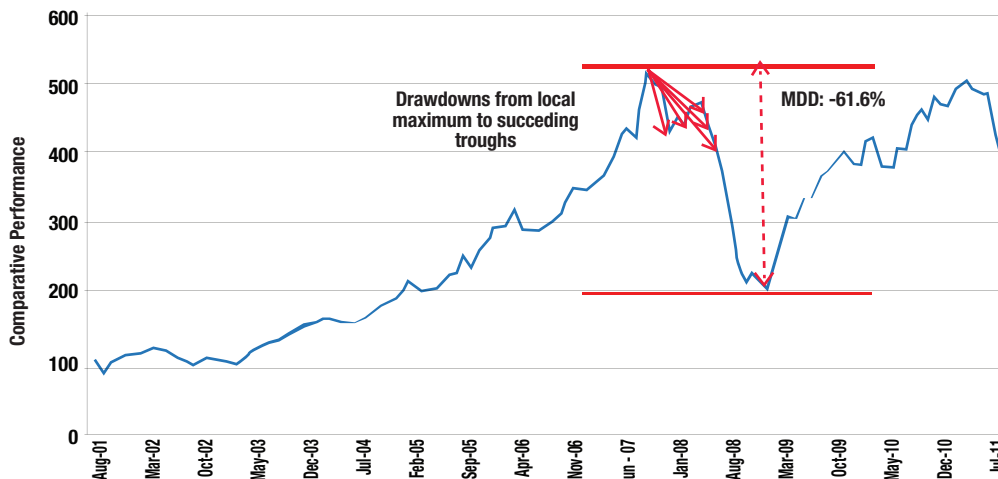
Risk Measures

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.

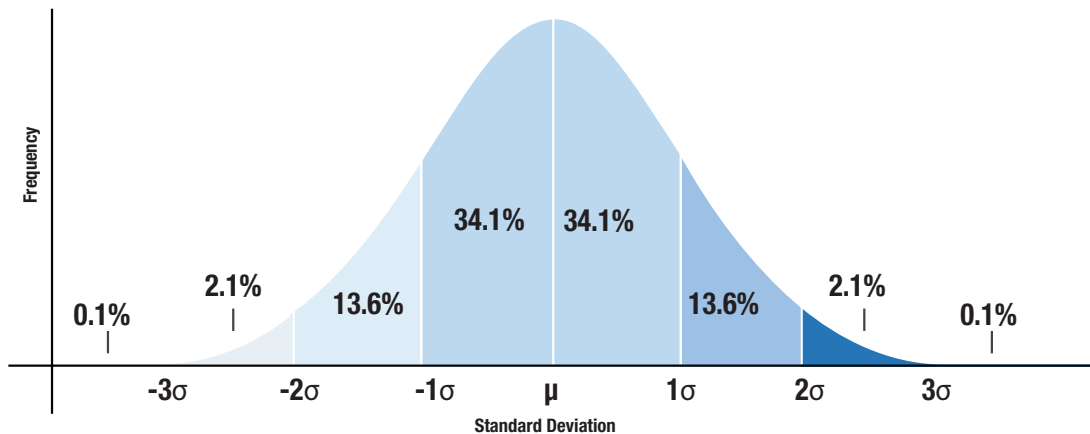
MaxDD is a good representation of how a fund reacted to previous market declines. It can be used as a relative measure against its peers, and provides some insight into the effectiveness of the manager's risk mitigation techniques and loss prevention strategies.

Emerging Markets Total Return Performance (Rebased to 100)



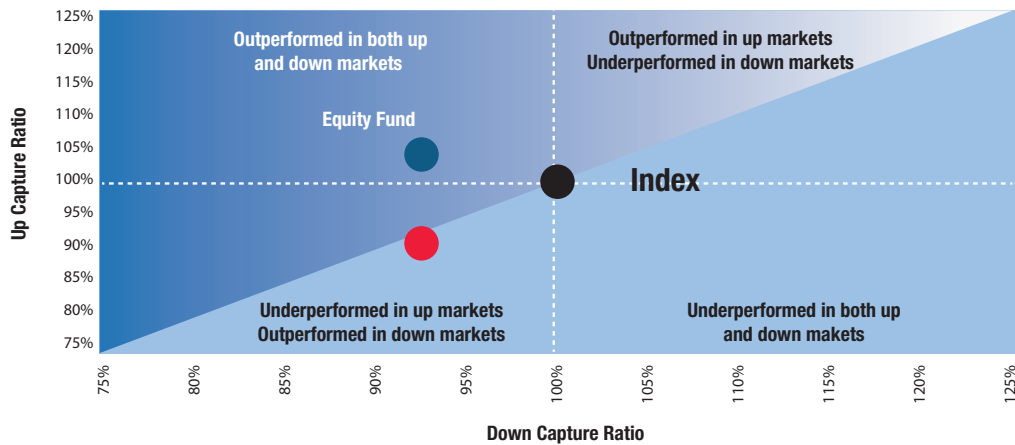
Standard Deviation (SD)

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.



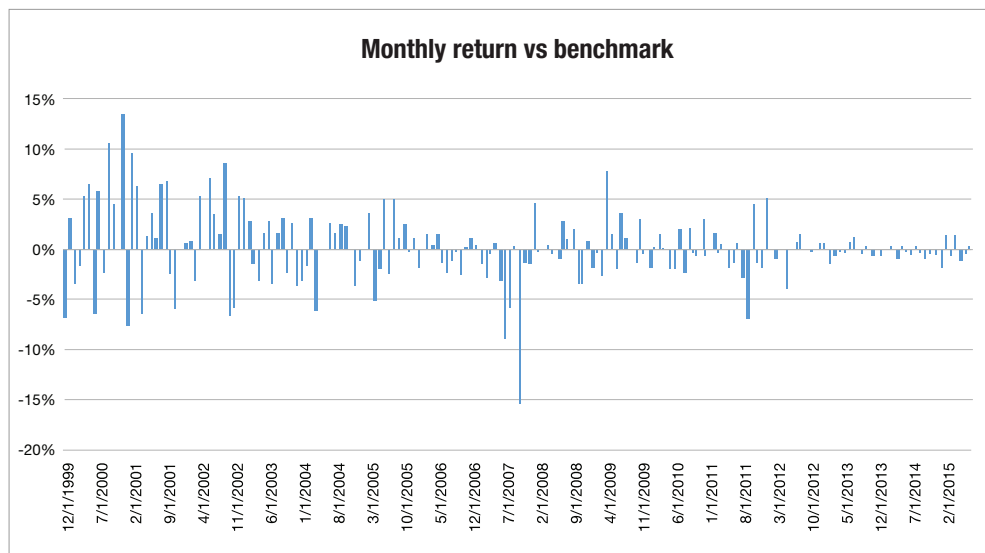
Up/Down Capture (UD)

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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At Fundata, we offer our clients the most accurate and comprehensive data on Canadian Investment Funds available in the market. Combined with our commitment to fast, flexible client service, the quality of the information we provide makes us the vendor of choice for your market data and analytical requirements.

For questions and comments please contact:

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