RBC® QUBE Low Volatility Guaranteed Investment Funds

Insurance

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Lower the volatility, not your expectations.

RBC QUBE Low Volatility GIFs seek to reduce portfolio volatility and provide diversification.

The case for low volatility

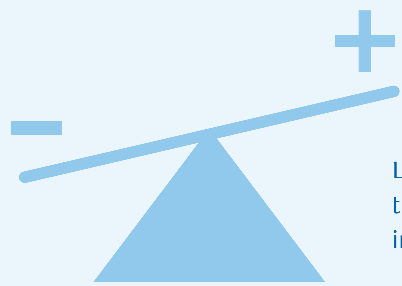
Reduced volatility helps investors remain committed to their investment plans

Market volatility causes some investors to steer away from their long-term plans by:

- Avoiding higher-returning asset categories, like equities. "I'll stick with bonds and T-Bills."
- Delaying when they invest. "I'll wait until the markets calm down before contributing this year."

Behavioural finance researchers such as Nobel laureate Daniel Kahneman attribute this to "loss aversion": the tendency to place a higher psychological weight on losses than on gains. Experimentally, they have found that a $100 loss has 2X the psychological impact of a $100 gain even though, mathematically, they are equivalent.[1] This means the path to achieving a positive return is very important, and low-volatility strategies can help. Low-volatility investing aims to reduce the downside while delivering returns comparable to those of cap-weighted indices.

Loss aversion



Losses have 2X the psychological impact of gains.

Low volatility works for...

Conservative investors

looking for a core equity holding with lower risk relative to other equity investments

Diversifiers

who are seeking to reduce overall portfolio volatility and wish to use a low-volatility strategy to replace a conventional equity strategy or complement it

Income seekers

who would benefit from the attractive dividend yields often associated with low-volatility strategies

Return seekers

who, by holding low-volatility investments, free up their portfolio risk budget, enabling them to add higher-potential-returning investments (high yield debt, emerging markets equities, etc.) while keeping the overall level of portfolio risk the same

[1] Thinking Fast and Slow, Daniel Kahneman, 2011.

Low-volatility mutual funds have been broadly available in Canada since 2011. **But not all low-volatility strategies are the same.** RBC® QUBE Low Volatility GIFs seek to reduce portfolio volatility, provide diversification, while also building in a number of steps to emphasize quality and profitability. And while our portfolio managers apply advanced technology and quantitative models when building portfolios, the underlying philosophy goes back more than 80 years to the 1934 Benjamin Graham bestseller, *Security Analysis*. Essentially, each holding is evaluated according to a variety of different factors.

Many low-volatility products that draw on index-based models screen for low-volatility securities based solely on recent price movements. This can lead to unintended risks, such as sector concentration or an over-reliance on small- and mid-cap stocks. Screening alone can also reject equities that could benefit the overall portfolio in terms of risk-adjusted return. RBC QUBE GIFs combine factor analysis, risk forecasts and portfolio optimization to build a more robust low-volatility portfolio.

Experienced team, proprietary technology

To understand how the RBC QUBE GIFs work, it's helpful to meet the people who run them and learn the story behind their process.

Proven skill in active quantitative management

The members of the RBC GAM Quantitative Investments Team, and the proprietary infrastructure that supports them, are the driving forces behind the RBC QUBE GIFs' unique methodology. Bill Tilford, Vice President and Senior Portfolio Manager, brings both research depth and an impressive track record to the team. Bill has been in the investment industry since 1986, and has been focused on implementing active quantitative strategies for more than 20 years.

Proprietary quantitative tools

The team employs e-Lab, an internally developed quantitative tool that allows many levels of analysis across thousands of securities. E-lab forms the backbone of the team's research and portfolio management efforts. The use of proprietary tools ensures they are tailored to the team's distinct investment process, creating a unique end product for investors.

RBC QUBE investment process

RBC QUBE GIFs invest in RBC QUBE mutual funds, managed by RBC Global Asset Management®.

Step 1: Score and rate the stocks in the investable universe

The team generates a score for each stock in the investable universe according to profitability, quality and stability factors. They then rate each stock in its sector and overall.

Rather than solely focusing on recent price movements to assemble portfolios, the team also considers forward-looking factors, such as earnings quality, growth rates, financial strength and dividend yield.

Step 2: Forecast risk

Using a proprietary risk model, the team generates a risk forecast for every stock in the investable universe. The model allows the team to understand the sources of risk.

Some off-the-shelf risk models use standardized global sectors, applying a one-approach-fits-all scheme of categories. The RBC Global Asset Management (GAM) Quantitative Investments Team, by contrast, has developed proprietary industry sectors that group companies by similar business models. This improves risk and return forecasts and contributes to better diversification.

Step 3: Optimize portfolio

The factor ratings and risk forecasts from Steps 1 and 2 form the inputs for the next stage: optimization. This software-driven process is designed to look at all combinations of stocks in order to produce the lowest-volatility portfolio. Then, the low-volatility portfolio is modified to maximize expected risk-adjusted returns.

The Quantitative Investments Team runs an extensive series of combinations to see which groups of stocks overall create the best risk-return profile. It is truly a portfolio approach to investing that focuses on the relationships between holdings.

Step 4: Review trades

Trades suggested during the optimization process are reviewed by a portfolio manager as a final check. There are certain situations when a company is meaningfully affected by something "outside of the model." This may prompt the portfolio manager to override the model by manually intervening and blocking a trade that has been suggested. Alternatively, the portfolio manager may decide to manually update the factor data to better reflect the company's specific situation. If manual intervention is necessary, it should be made clear that the portfolio manager is not looking to impose a personal view of a stock. They are simply trying to reduce their active bet taken on securities that the model is not capturing well.

RBC® Insurance

Any amount that is allocated to a segregated fund is invested at the risk of the contract holder and may increase or decrease in value.

RBC Guaranteed Investment Funds are individual variable annuity contracts and are referred to as segregated funds. RBC Life Insurance Company is the sole issuer and guarantor of the guarantee provisions contained in these contracts. The underlying mutual funds and portfolios available in these contracts are managed by RBC Global Asset Management Inc. When clients deposit money in an RBC Guaranteed Investment Funds contract, they are not buying units of the mutual fund or portfolio managed by RBC Global Asset Management Inc. and therefore do not possess any of the rights and privileges of the unitholders of such funds. Details of the applicable Contract are contained in the RBC GIF Information Folder and Contract at www.rbcinsurance.com/segregatedfunds.

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