Applying a Consistency Lens™ to Fund Evaluation

Investing 360°

Tap into the Power of Consistency

INVESTMENT MANAGEMENT
Reliable Partner | Reliable Investing®

VOYA® | Retirement University for Advisors™

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VOYA® | Retirement University for Advisors™

Voya Retirement University for Advisors™ is a professional development program designed to help advisors build stronger relationships with personal retirement and defined contribution plan clients. The Tap Into the Power of Consistency course consists of an Investing 360° track, which provides exclusive, proprietary analysis to help strengthen investment guidance, and an Engagement 360° track, which offers insights and industry best practices to help connect with clients on a deeper level.

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Tap Into the Power of Consistency

Beyond the overall planning essentials, a personal retirement solution must also confront the many uncertainties investors face and the volatility inherent in the market that can often prompt suboptimal actions. Voya's Consistency Lens™ methodology can help. Although "past performance is not a guarantee of future results" is a common concern in the investment industry, we believe a fund manager's track record may offer important signals to identify which strategies may help clients best position their portfolios toward a steadier trip along the retirement investing path.

Key Findings

- Incomplete or faulty analytical techniques may serve to aggravate investors' frustration with the difficulty of selecting fund managers whose performance will live up to expectations.
- To help reduce investor uncertainty and the suboptimal behavior it may inspire, we developed a way to identify active mutual funds with historically consistent and sustained characteristics.
- Our analysis identified six returns-based factors to measure and rank funds for consistency over time: Information Ratio, Sortino Ratio, Overall Ratio, R-Squared, Upside Capture and Downside Capture. We call the unique application of these six factors the Consistency Lens™.
- We applied the Consistency Lens™ to a universe of ten Morningstar open-end mutual fund categories — seven equity and three fixed income — to test its effectiveness.
- We find that using rolling three-year returns offers deeper insights into performance because *many* data points starting and ending on *different* dates is more robust than only *four* data points that all end on the *same* date.
- By adjusting the weights of the six factors, we aligned the rankings with three broad investor profiles analogous to retirement "life stages" — retirees, pre-retirees and accumulators.
- Application of the Consistency Lens™ dramatically narrowed the potential range of uncertainty for fund selection over the entire measurement period.
- High rankings on the six factors were found to be correlated with high excess returns over a full 10-year historical period.

Expectations and Emotions in Retirement Investing

At times throughout their lives clients are likely to worry about having enough money to fund a secure and comfortable retirement. Voya's *2015 Retire Ready Index Study* found that more than half of workers aged 40 and older are either "extremely" or "very" concerned about outliving their savings. This can cause anxiety about building wealth faster — anxiety that can be amplified when the markets and account values seesaw.

A degree of investment uncertainty is inevitable when it comes to retirement planning, and some level of stress is normal with the effects of market ups and downs, whether clients need aggressive strategies for accumulating wealth, balanced strategies for transition into retirement or stable strategies for retirement income. To help clients stay on track, it is important to remember that research shows that market fluctuations have an asymmetric effect on investors — meaning that they tend to fear losses much more than they enjoy gains — potentially creating an emotional tug of war between the search for higher returns and the desire to avoid large losses.

Moreover, academic research supports what most of us know from our own experience: when clients feel uncertain about the future, they may develop unrealistic expectations and perhaps act rashly based on emotion rather than objective reasoning. These emotional reactions could potentially sabotage well-considered retirement plans through inadvisable behaviors such as buying high and selling low. At one extreme, unrealistic expectations may drive a conflicting desire for *both* maximum wealth at retirement *and* the avoidance of losses along the way. Of course, in the long run risk will relate to return in a rational way — suggesting that accumulating the most money would require taking the most risk — but few investors could tolerate the stress associated with a "maximum risk" portfolio.

At Voya® Investment Management we have spent considerable time researching ways to resolve some of these conflicts and the stress they produce. We have developed a Consistency Lens™ with which to evaluate actively managed mutual funds to identify those funds with historically consistent and sustained performance characteristics, with a particular focus on mitigating downside risk. By emphasizing the concept of "winning by not losing," we seek to inspire investor confidence and more reasonable expectations across market cycles.

Clients tend to hate losses much more than they like gains – which can amplify negative behavior at precisely the wrong time.

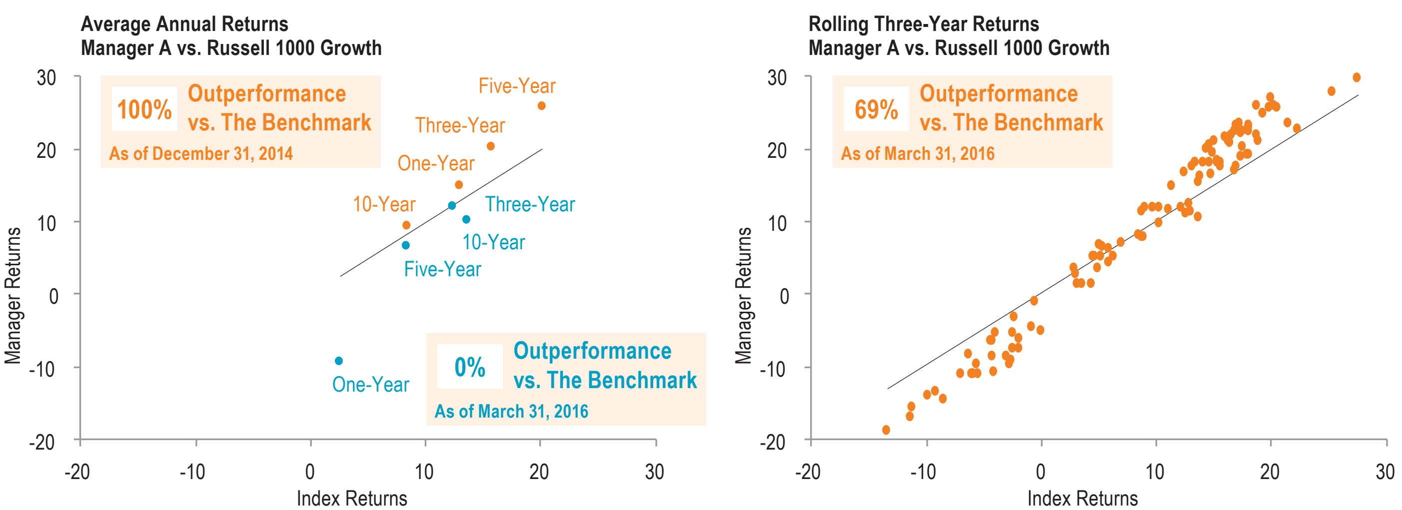
Importance of Rolling Three-Year Returns

The typical fund selection process may unknowingly be escalating client uncertainty as well. Consider the limited number of data points that might be used to make investors' buy and sell decisions, sometimes along the lines of focusing on one-, three-, five- and 10-year total returns from one specific end date. While these types of performance snapshots can offer a starting point to review how a fund has performed in a prevailing market environment, it can mask how it is likely to respond if conditions change.

Consider the real-world example in Figure 1. On the right are trailing returns of the same fund from two arbitrary dates. Investors buying based on the consistent outperformance from December 31, 2014 may have been unpleasantly surprised by the consistent underperformance received in a later period ending March 31, 2016. In contrast, the rolling three-year returns for the same fund uncovers a tendency to outperform in strong markets and underperform in difficult periods. With this in mind, our Consistency Lens™ uses rolling three-year returns in all of its analysis.

Figure 1. Rolling Three-Year Returns Offer Deeper Insights in Performance

The Risk of Investing on Only Four Points of Data ... ... vs. 85 Points of Data



For illustrative purposes only.

Our Approach

While historical returns are a notoriously fragile indicator of future expectations, we believe there are certain aspects of a fund's performance history that are indicative of a repeatable approach to successful investment management (of course, there is no guarantee that those preferences and processes will be rewarded by the markets). To isolate these factors, we began with the funds in each of 10 Morningstar® categories, eliminating those with track records of less than three years as well as index funds and funds with assets under $1 million. The resulting peer group universes are:

Figure 2. Winnowing the Investable Universe: Sample Categories

Category	# of Funds	Category	# of Funds
Large-Cap Growth	204	Small-Cap Growth	87
Large-Cap Blend	155	Small-Cap Blend	67
Large-Cap Value	164	Intermediate Bond	121
Mid-Cap Growth	80	Senior Bank Loans	36
Mid-Cap Blend	42	High Yield Bond	90

Note: This analysis is based on the 10-year period ended September 30, 2015.
Source: Morningstar® Direct, Voya Investment Management

Next we considered the vast array of available performance measures and narrowed the list to those that seemed to best reconcile the pursuit of higher returns with the desire to avoid potential losses. Of these, we isolated six return-based factors that historically have distinguished those funds demonstrating consistent performance and delivering enhanced total returns over time. Descriptions of the selected criteria follow.

Figure 3. The Consistency Lens™ is a Unique Application of Six Return-based Factors to Help Evaluate Funds for Consistency

1 **Information Ratio**—*Skill vs. Benchmark:* quantifies the relationship between a fund's excess return and the active risk taken in order to produce it. A main consideration in selecting fund managers should be whether their success is intentional, deliberate and skillful — or merely luck. Skill is repeatable; luck is not.

2 **Sortino Ratio**—*Returns vs. Downside Risk:* shows the manager's ability to mitigate the possibility of losses in the context of overall results. A return-to-risk ratio, the Sortino Ratio corrects the problem inherent in standard deviation-based analytics (such as the Sharpe Ratio), which convert up-market returns into "risk"; clients would be unlikely to view above-average returns in a rising market as a risk.

3 **Overall Ratio**—*Skill Under Changing Market Conditions:* consolidates evidence of manager skill. Our analysis shows that high rankings in both Upside Capture and Downside Capture are very difficult to achieve; a favorable Overall Ratio indicates such a skill, which we call "versatility".

These factors measure manager skill

4 **R-Squared**—*Style Purity:* indicates whether managers consistently invest as they claim. Many mutual funds are managed against benchmarks like the S&P 500 or the Barclays bond indexes; to outperform its benchmark the fund's composition must differ from it to some extent. But how much? R-Squared objectively measures the degree to which a fund's performance differs from the returns of its benchmark. Outperforming without deviating wildly from the benchmark suggests an effective security-selection process; this is potentially repeatable, as many small decisions about individual securities are inherently diversified and more likely reproducible than a few big decisions about overall portfolio strategy.

5 **Upside Capture**—*Ability to Realize Gains:* shows a manager's historical ability to identify securities that have appreciated faster than the market averages. Since the stock market has gone up about 65% of the time since 1926*, Upside Capture is crucial to success. Favorable Upside Capture (say, greater than 100%) provides a clue that a manager's buy discipline can potentially identify securities that are undervalued.

6 **Downside Capture**—*Ability to Avoid Losses:* the only risk-aversion measure that really matters to clients. Beta, standard deviation, tracking error and others are valuable metrics, but Downside Capture shows explicitly how a fund behaved when the market was falling. A fund's participation in down-market moves should be less than 100% if there is any principal protection element in the manager's strategy. In terms of process, Downside Capture is, among other things, an indicator of an effective sell discipline, which is vital when security prices are falling.

These factors measure manager process and priorities

How Well Did It Work?

In Figure 4, we can see that screening funds on the basis of the selected factors identified a universe of funds with historical excess returns relative to their respective benchmarks that exceed the category average by 128 basis points. Interestingly, the style-purity factor (R-Squared) was least effective in adding to the past returns; in our universe of 10 fund categories, finding funds able to generate high excess returns while maintaining a close alignment with the benchmark was a challenge. The excess returns from the other factors indicated consistently high additions to the unscreened averages. In Figure 4, returns highlighted in orange were the best in each group, while those in teal were among the top three. Information Ratio, Sortino Ratio and Overall Ratio were cited most often among the leaders (70% of the time).

Figure 4. Screening Based on Select Return Factors Increased Excess Return Potential

		Increase in Excess Return for Top 50% Percentile by Factor vs. Category Average						
	Category	Factors						
Morningstar Category	Average Excess Return	Overall Category 50th Percentile	1 Info Ratio	2 Sortino Ratio	3 Overall Ratio	4 R^2	5 Up Capture	6 Down Cap-ture
Large-Cap Growth	-1.23	1.40	1.52	1.53	1.52	0.91	1.58	1.28
Large-Cap Blend	-0.87	1.09	1.19	1.20	1.19	0.97	1.26	1.17
Large-Cap Value	-0.41	1.38	1.45	1.57	1.51	1.09	1.61	1.46
Mid-Cap Growth	-1.08	1.59	1.73	1.85	1.77	1.07	1.58	1.80
Mid-Cap Blend	-2.17	2.03	2.31	2.16	2.35	1.51	1.95	2.41
Small-Cap Growth	-0.64	1.35	1.43	1.47	1.50	0.91	1.56	1.23
Small-Cap Blend	-0.36	1.22	1.29	1.38	1.36	1.14	0.83	1.47
Intermediate Bond	0.05	1.04	1.19	1.07	0.99	0.68	1.15	1.14
Senior Bank Loans	-0.79	0.73	0.98	0.91	1.20	0.27	1.02	1.11
High Yield Bond	-1.63	0.98	1.19	1.19	1.15	0.76	1.18	1.11
Average Excess Return/Increase	**-0.91**	**1.28**	**1.43**	**1.43**	**1.46**	**0.93**	**1.37**	**1.42**

Substantial increase in excess return

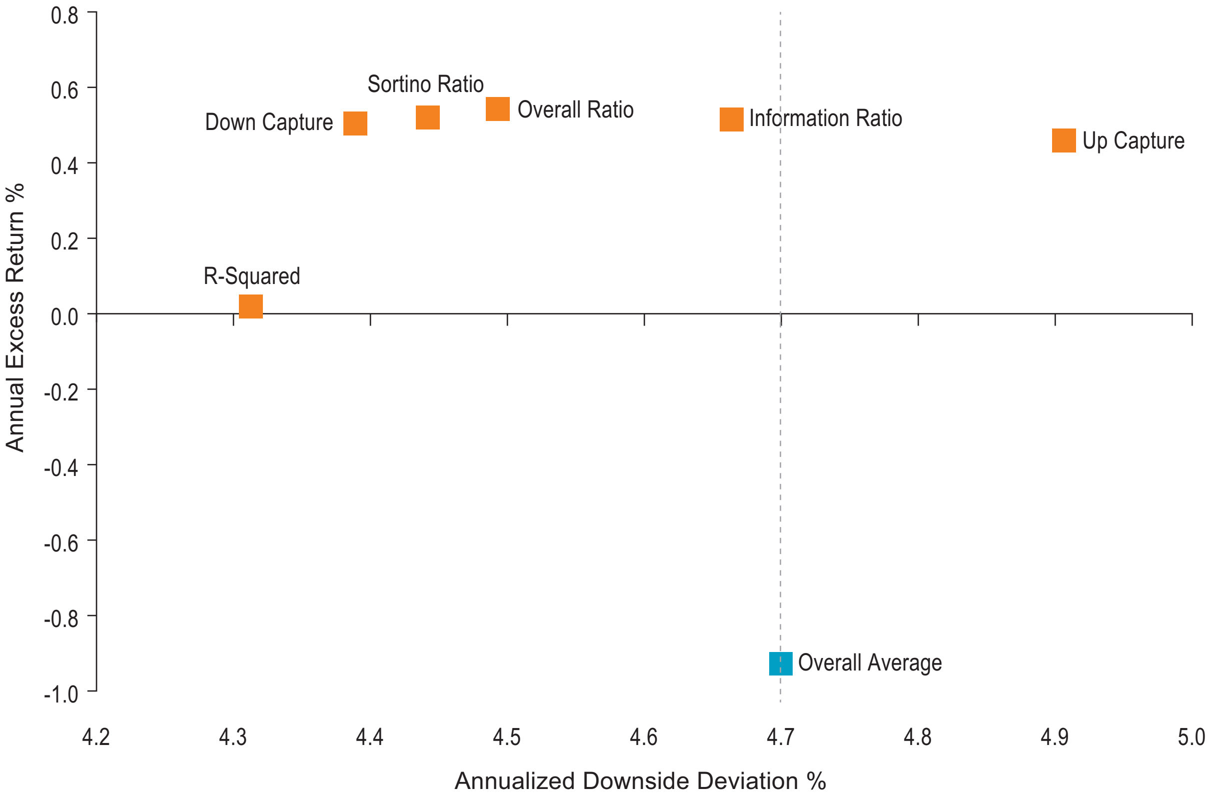
Key:
Top perfomer
2nd and 3rd performer

Note: The analysis was based on rolling three-year returns with the rolling window advanced one month at a time for the A-share class at net asset value for 1,046 funds over the period 10/01/2005–09/30/2015. **Past performance is no guarantee of future success.**
Source: Morningstar Direct, Voya Investment Management

The data points in Figure 5 place the historical excess returns (the basis for Figure 4) into a two-dimensional space with the applicable downside risk data on the horizontal axis. Again, the data points are averages for the excess returns and risk for the funds that ranked in the top half of their respective categories in terms of *both* excess returns and the selected criteria. The benefits of identifying funds on the basis of these yardsticks are evident: all factors (except Upside Capture) potentially supported risk reduction (because they were to the left of the “overall average” point on the graph), and all demonstrated the ability to enhance excess returns.

Figure 5. Potential Return-to-Risk Ratios Showed Improvement Across All Criteria

Return-to-Risk Potential for Factor Screens 10 Asset Classes, 10 Years Ending September 30, 2015



Note: The analysis was based on rolling three-year returns with the rolling window advanced one month at a time for the A-share class at net asset value. Represents the average return and downside risk data for the top 50% of 1,046 funds ranked for both excess returns and the respective consistency factors over the period 10/01/2005–09/30/2015. **Past performance is no guarantee of future success.**
Source: Morningstar Direct, Voya Investment Management

Past Performance Confirms Consistency Lens™ Efficacy

Figure 6 shows that funds ranked in the top quartile by consistency, based on equal-factor weightings, also ranked in the top quartile of excess returns 74 % of the time (average 11th percentile). The remaining 26% of these highly consistent funds ranked in the second quartile by excess returns (average 33rd percentile). Notably, none of the funds in the first quartile for consistency were ranked in the third or fourth quartiles in terms of excess return.

There were 717 funds in our universe with a full 10-year history of returns. Among them, those with high consistency rankings tended to produce better excess returns, as confirmed by the linear regression in Figure 7 that shows 79% correlation between the two variables — meaning that the consistency factor rankings for the funds "explained" (in a statistical sense) the excess return rankings 79% of the time.

Figure 6. Top Consistency Rankings Coincided with High Excess Return Rankings

Rolling Three-Year Periods, 10/2005–09/2015

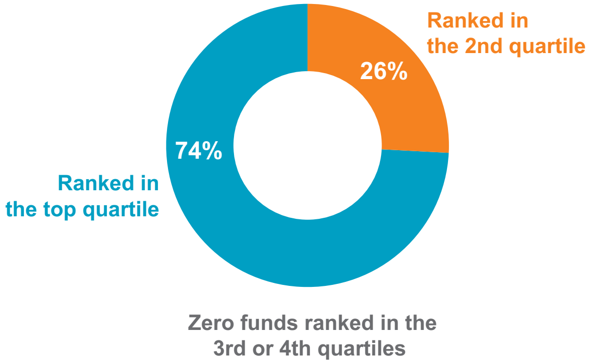
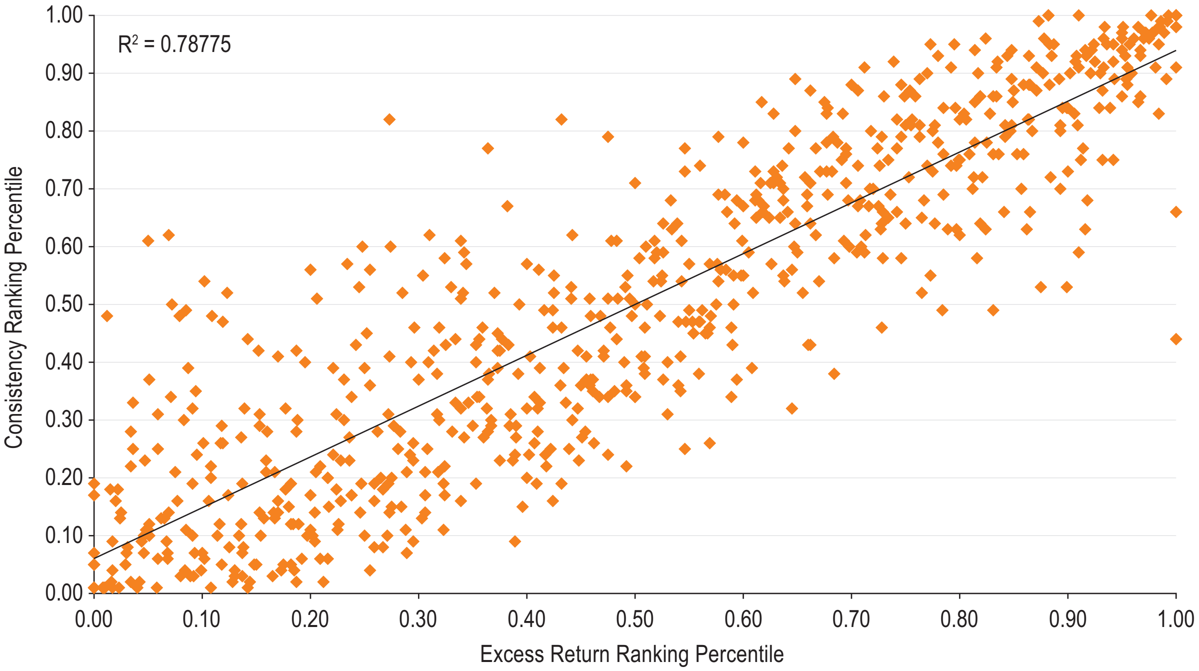


Figure 7. High Consistency Factors Helped Explain Excess Return 79% of the Time

Consistency vs. Excess Returns, Rolling Three-Year Periods, 10/2005–09/2015



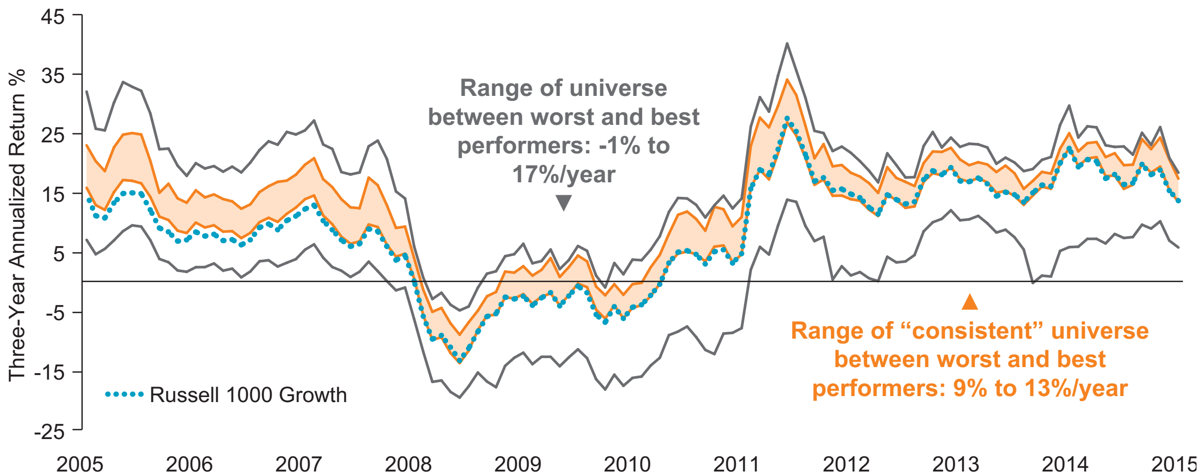
Note for both charts: Based on 177 funds ranked in the first quartile for consistency from among 717 funds in 10 asset classes with a 10-year record.
Past performance is no guarantee of future success.
Source: Morningstar Direct, Voya Investment Management

Why is This Evaluation Important?

Among the thousands of mutual funds available for investment, there is a huge variation between the returns of the best and the worst funds in any category. If we regard the range of possible returns over a lengthy period as a measure of relative uncertainty in fund selection, we can show that our analysis is a potentially effective means of reducing that uncertainty. Figure 8 shows the range of possible rolling three-year returns for large-cap growth funds was 18% (17% at the high end versus -1% at the low) over the period 2005–15. However, the range of rolling three-year returns for the funds ranked above median for consistency was only 4% (13% at the top and 9% at the bottom), making the potential decrease in uncertainty around 78%.

Figure 8. Improved Probability of Outcomes

Range of Three-Year Returns, Large-Cap Growth Funds: 2005–2015



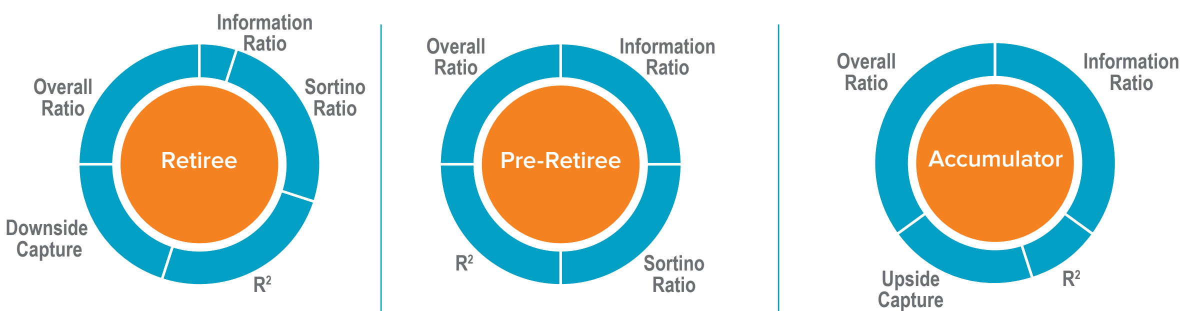
Note: Morningstar Large-Cap Growth Fund category of funds with at least a three-year return history and $1 million in assets as of 09/30/2015, not including index funds. The analysis was based on rolling three-year returns with the rolling window advanced one month at a time for the A-share class at net asset value for 181 large-cap growth funds over the period 10/01/2005–09/30/2015. **Past performance is no guarantee of future success.**
Source: Morningstar Direct, Voya Investment Management

Aligning Factor Combinations With Risk-Tolerance Categories

We tested combinations of the six return factors and found that a variation in factor choices and weights could drive performance that was well aligned with the goals typical of investors across retirement "life stages"— retirees, pre-retirees and accumulators. While some factors are included in all the life stages — most notably the Overall Ratio between Upside Capture and Downside Capture — careful tweaks of the factor mix resulted in portfolios appropriate for each of the three life stages, as described below.

Our goal was to produce discrete fund groupings by selecting and weighting the performance criteria, as shown in Figure 9. Information Ratio, R-Squared and Overall Ratio were included in all life stages at various weights. Sortino Ratio, Upside Capture and Downside Capture, on the other hand, were included selectively to shape the return distributions as closely as possible to the assumed risk tolerances.

Figure 9. Investor Life Stages



- **Investor characteristics:** The most conservative investors, presumably satisfied by funds that closely track benchmarks and have lower downside risk than other funds.
- **Factor emphasis:** Sortino Ratio, Downside Capture and R-Squared are emphasized to identify funds with very low potential for actual losses and a return pattern that is close to a chosen benchmark.

- **Investor characteristics:** These investors are assumed to prefer a secure, balanced, middle-of-the-road approach, offering consistent, above-benchmark returns with average downside volatility.
- **Factor emphasis:** Information Ratio, Sortino Ratio and R-Squared are heavily weighted to identify funds that show above-average skill and risk-adjusted returns and steady, above-benchmark results.

- **Investor characteristics:** The youngest investor group is characterized by an expectation of the highest potential returns and a willingness to accept typical or above-average volatility.
- **Factor emphasis:** Information Ratio and Upside Capture are heavily weighted to identify funds with above-average returns in up markets, positioning them for more return potential over time than funds in the other groups but with commensurately higher risk of loss.

Source: Voya Investment Management

Strengthening Excess Return Potential by Client Segment

If screening funds by individual return-based factors was beneficial, it followed that evaluations combining the factors (based on the weights in Figure 2) should produce results even better aligned with each of the life stages. As you can see in Figure 10, doing so drove significant potential gains across all fund categories and life stages. The actual excess returns were uniformly higher, while the downside risks were uniformly lower. In fact, the average downside volatility for the top-quartile funds in the most aggressive group (presumably the most risky) was lower (4.52%) than the average for the entire universe (4.70%).

Figure 10. Customizing Factor Weights by Life Stage Helped Shape Risk/Return Exposures

	Category	Average Excess Returns		
	Average Excess Return	Retiree	Pre-Retiree	Accumulator
Large-Cap Growth	-1.23	0.49	1.25	1.23
Large-Cap Blend	-0.87	0.59	0.82	1.04
Large-Cap Value	-0.41	1.55	1.67	2.66
Mid-Cap Growth	-1.08	1.15	1.25	2.05
Mid-Cap Blend	-2.17	0.75	0.75	0.66
Small-Cap Growth	-0.64	0.44	0.80	1.40
Small-Cap Blend	-0.36	2.26	1.67	1.95
Intermediate Term Bond	0.05	1.48	1.92	2.00
Senior Bank Loans	-0.79	-0.27	1.09	1.16
High Yield Bond	-1.63	-0.32	0.38	0.18
Average Excess Return	-0.91	0.81	1.16	1.43
Average Downside Risk	**4.70**	3.92	4.02	**4.52**
Return/Risk Ratio	-0.20	**0.21**	**0.29**	**0.32**

Clear alignment with investor life stages

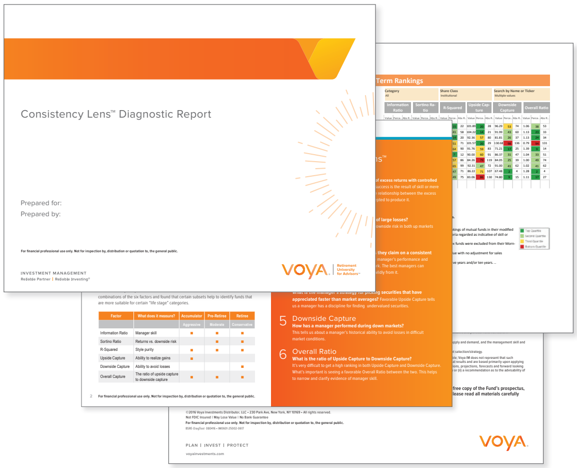
Note: The analysis was based on rolling three-year returns with the rolling window advanced one month at a time for the A-share class at net asset value for 1,046 funds over the period 10/01/2005–09/30/2015. **Past performance is no guarantee of future success.**
Source: Morningstar Direct, Voya Investment Management

Voya's Consistency Lens™ Diagnostic Report

Our proprietary Consistency Lens™ Diagnostic Report can help you apply this methodology to evaluate specific funds for factor rankings and alignment to client goals and risk tolerance. This easy-to-use report can help supplement your existing fund evaluation process through a practical application for stress testing current portfolio holdings and identifying potential new opportunities.

How to Get Your Customized Diagnostic Report

1. Reach out to your Voya Representative at **(800) 334-3444**
2. Share the funds you'd like to analyze
3. Your Voya Representative will review and share your customized report with you



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Conclusions

- "Consistency" means different things to investors in different circumstances. Young investors may care most about high and consistent excess returns, while those nearing retirement are more focused on avoiding losses.
- Our analysis relied on rolling three-year returns to maintain a long-term perspective and eliminate "end period dominance" that afflicts evaluations based on trailing periods of one, three, five or more years.
- We identified six performance-based factors and combined them in such a way as to show that both improved excess returns and reduced risk are detectable through factor screening.
- We concentrated on excess returns because excess returns represent real money in client accounts and downside risk rather than other statistics, given client concerns about losing money.
- By selecting and weighting the factor mix we aligned the screens with the goals of investors across different "life stages" — retirees, pre-retirees and accumulators.
- We produced uniform outcomes across 10 different fund categories, including over 1,000 mutual funds.
- While past performance cannot assure future success, we show that rankings on the consistency factors were highly correlated with excess returns over the full 10-year period.
- Our Consistency Lens™ Diagnostic Report can help put this methodology to work through detailed fund reviews and comparisons.

Get started today at **RetirementU.Voya.com**

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