SGA
Sustainable Growth Advisers

The Role of Risk in Portfolio Construction

by Steve Skatrud, CFA – Client Portfolio Manager

Executive Summary

Equity investors, from Warren Buffett to high frequency traders, vary in their emphasis on the "voting machine vs. weighing machine" aspects of the pricing mechanism of the market. Our purpose in writing this paper is to explore this dynamic along with a few related questions that we sense are on the minds of institutional clients. Specifically, we explore these topics:

- **An equity manager's investment methodology is a function of several correlated variables. How they define risk, their investment time horizon, the depth of their company research, the specificity of their selection criteria, and their emphasis on the role of the benchmark in portfolio construction, are inextricably linked in the formulation of their approach. Given that there are multiple approaches that can be successful, we suggest that the most effective manager-client relationships are based on a mutual understanding of how these investment variables impact the prospective trajectory of returns, and how to best assess results.**

- **Return objectives in managing equities vary depending on the strategy. In portfolio construction, there is a distinct trade-off between seeking to beat a benchmark with high frequency and seeking to beat it by a large magnitude. Similarly, there is a difference between an approach that attempts to provide a *chance* to beat an index by a large magnitude, and one that provides a *high probability* of generating attractive returns over time. And some equity approaches invest with an absolute return mindset which manifests in the depth of research and the understanding of the intrinsic worth of company holdings relative to current stock price.**

- **Although an equity index effectively serves as the low-cost alternative, and thus fairly represents a client's cost of capital for stock market allocations, we do not believe that there is anything particularly sacred about an index in that underperforming portfolios in any period are not generically "wrong" and outperforming portfolios are not "more right." Additionally, we believe that clients who place a major emphasis on beating benchmarks on a consistent quarter to quarter or year to year basis, may best be served by managers who are more benchmark-oriented in portfolio construction and have a relative definition of risk that uses the benchmark as its "anchor".**

- **Our interest is not to defend active management as a category. We believe that over long periods of time the average manager, after fees and transaction costs, will be challenged in generating meaningful excess returns. However, we also believe that equity management skill exists, and when not burdened by excessive assets under management and total costs, this skill will likely translate into favorable net results over time. Additionally, we recognize that there is a cyclical nature to the relative performance of active managers and that variables such as market direction, disparity of performance within a stock universe, and the prevalence of certain macro factors can influence such performance. Future relative results are often not correlated with recent trends.**

- **We detail the relationship between the driving investment beliefs at SGA and how they shape our approach to research and portfolio construction.**

Risk Control and Returns

One investment approach can't satisfy the myriad investor needs present across the market place. As a result, there exist a plethora of active approaches across styles and passive strategies ranging from index replication to focused absolute return portfolios. How an investment approach defines and addresses risk will shape their approach to portfolio construction and research, and have a tremendous impact on the return pattern that can be expected. It will also dictate the best manner in which its performance can be evaluated over time. A portfolio of hundreds of stocks, built to vary little from a benchmark index requires a different time horizon

and level of patience than does a concentrated portfolio of stocks that looks completely different from an index and is dependent upon stock specific theses driving returns. The portfolio chosen by an investor will depend upon the level of risk they are comfortable with, their time horizon and the return pattern they seek.

There are many definitions of the term "risk". At the most basic level, it can be thought of as the possibility that something bad or unpleasant may happen. To investors, the definition can range from the risk of experiencing capital loss to the risk of incurring significant underperformance relative to a chosen index or desired return pattern. Many consider **tracking error**, which measures how closely a portfolio follows an index, to be a good representation of risk. In these cases, investors are associating low tracking error with low risk but are not taking into account absolute volatility of returns or the potential for significant capital loss. This can only be true if you assume that the benchmark represents the optimal investment standard against which investment success or failure should be evaluated.

Others think of **standard deviation of returns** as being an effective measure of risk in that it measures the dispersion of returns from a mean. The benefit of this approach is that volatility is measured on an absolute basis, not relative to a benchmark and it provides a valuable input on the level of uncertainty. It enables the investor to ascertain, independent of other variables, the historical level of volatility of a proposed strategy. However, a low standard deviation does not indicate that the actual returns of an investment will generate an expected pattern of returns or be sufficient to meet an investor's future liabilities, be it a pension plan, an individual saving for retirement, or an endowment charged with meeting a certain expected return to fund future spending needs. The standard deviation has to be viewed in the context of the absolute level of expected returns based on a set of forward looking assumptions. Only then can it be judged relative to other alternatives.

Still others consider risk to be more associated with the likelihood of an investment resulting in a **permanent capital loss** which could negatively impact the chance of a needed level of return being generated or require a larger contribution to be made to a qualified plan. At the most personal level, it could impact a person's ability to retire on schedule or live the lifestyle they had planned.

Many discussions about risk management are actually more about risk measurement. This is problematic as forward looking or actual risk doesn't necessarily reflect historic risk and is impossible to identify with precision. As attempts are made to be precise, people frequently rely on statistics that do not relate to real risks such as the potential of permanent capital impairment or the likelihood that a temporary capital loss could result in a change needing to be made to a well-designed long-term strategy. Additionally, some methods of risk measurements can amplify the tendency to fall prey to **"recency"**, the insidious belief that recent trends are strong indications of future results. This often leads investors to embrace or lose faith in strategies based on a quantitative assessment of recent patterns, resulting in poor timing of investment decisions.

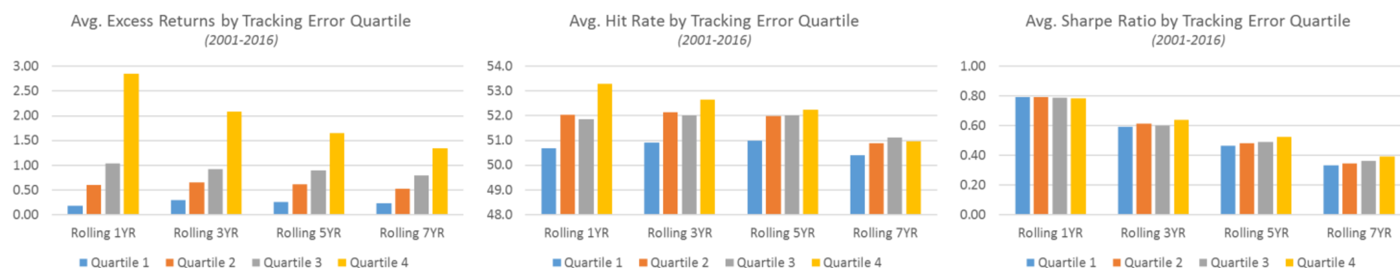
Risk and Portfolio Construction

Investors who are not comfortable with a higher level of perceived "risk" or volatility relative to an index, may be more willing to accept average characteristics and returns. Others use analytical tools such as Barra or Axioma to measure how the "risk" of an index compares to that of a portfolio on a backward-looking basis and then extrapolate how "risk" metrics may be represented in the portfolio in the future. Standard deviation, variability, beta and value at risk are other measures of risk that some investors pay attention to. Others have different approaches to controlling risk, because they believe constraining themselves to look largely like an index inevitably limits their ability to generate above average returns. **We believe there is a key tradeoff between seeking to beat a benchmark with a high frequency and trying to beat it by a large magnitude.**

Given the differences in how portfolios must be constructed to outperform with high frequency or by a large magnitude, the two objectives tend to be mutually exclusive. In order to outperform a target index with the highest frequency possible, it's typically

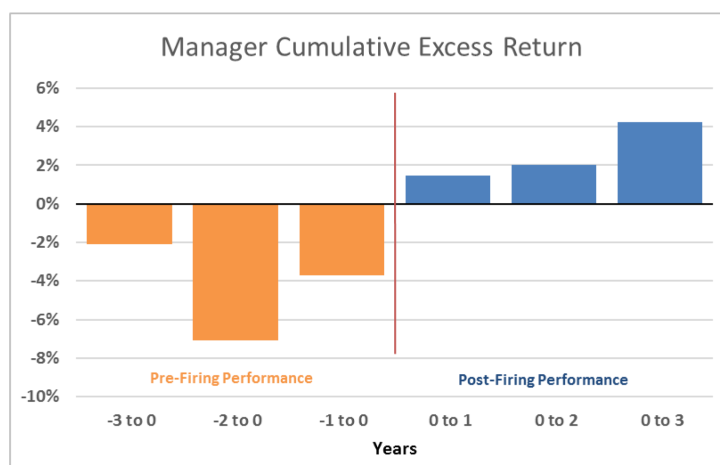
necessary to own a large number of stocks, and deviate from the benchmark little in terms of sector and industry weights, while managing factor exposures closely. The focus is on making many small active stock weight decisions relative to the benchmark. Such an approach reduces risk in terms of return variability relative to an index (tracking error) but is unlikely to generate significant market beating returns over time. While more heavily constrained, the process suffers from some of the same difficulties associated with any other active approach dependent upon the performance differential of individual stocks, making it subject to the outperformance and underperformance of individual stocks over time. In some senses, the difficulty in making an educated decision on which of the myriad stocks in the index to under or over-weight makes it even more difficult, but the consequences of being wrong are less.

Using Investment Metrics U.S. Large Cap Growth Universe, we grouped managers into quartiles based on tracking error (1 being the lowest and 4 the highest) using the Russell 1000 Growth Index as a benchmark and examined the level of excess returns generated, the hit rates, i.e. how often they outperformed, and the level of risk-adjusted returns as measured by the Sharpe Ratio. Rolling periods of 1, 3, 5, and 7-years were used for the years 2001-2016 to conduct this study. The analysis shows that U.S. LCG managers that take on more "risk", defined as tracking error are, on average, able to generate higher levels of excess returns in all rolling periods. The analysis also indicates that U.S. LCG managers with higher tracking error are able to beat the benchmark more frequently than those with lower tracking error, which makes one wonder why tracking error is such a commonly used tool for measuring and managing risk. Also noteworthy is the finding that U.S. LCG managers with higher tracking error seem to deliver better risk-adjusted returns when looking at longer rolling periods, such as rolling 3, 5, and 7-year periods. (We recognize that the underlying dataset is subject to survivorship bias given that some underperforming managers go out of business, and as such it is possible the results could be skewed to some degree in favor of higher tracking error managers.)



Over the past several years, index based passive and semi-active smart-beta products have gained popularity as active management stumbled in the post-financial crisis world of high stock correlations. Unprecedented monetary stimulus encouraged risk taking, "floating all boats" with little differentiation, and reducing the effectiveness fundamental analysis has in differentiating winners from losers. One of the key factors driving the move toward passive index investing has been a desire for certainty and "risk control", in a more volatile and uncertain world. **While index investing can remove, or at least minimize, the risk of performing differently than "the market", we are skeptical that this necessarily leads to less risk or a higher absolute or relative return in the long run.** We believe risk control is better focused on factors that pose a risk to business capital and long-term appreciation potential. If investors place capital in the equity market, thereby accepting its inherent volatility, they should have the tolerance for short and intermediate-term variations in price, the chance of loss, and a time horizon which incorporates at least a "typical" market cycle. **Artificially limiting volatility to that of the market or attempting to dampen it through esoteric strategies likely limits the long-term upside that leads investors to equities in the first place.** Another factor supporting the move of some plan sponsors toward passive has been the strength of stock market returns in the post financial crisis rebound as historically low interest rates have primed the market. As with most investment trends, people often look at recent results and extrapolate them into the future despite the fact that the conditions which may have supported the results in the past are no longer applicable. While it may be too early to make such a point regarding the growing preference for passive investing, we think it is important to point out that investing in indexes tends to

look most attractive following years of strong market performance. During cyclical moves up, selectivity plays less of a role when correlations are high. As an example, while indexing was popular in 2007 following years of stock market strength, it wasn't in 2008 or 2009 amid unprecedented market volatility and absolute losses. **In today's world, following almost a decade of unprecedented monetary stimulus and the Fed essentially constructing a floor beneath the market, we believe the period of high correlations and reduced focus on risk is nearing an end as the Fed's quantitative easing and accommodation gradually gives way to higher interest rates in the U.S. for the first time in nearly a decade.** Investors considering a shift to passive following the strength witnessed in recent years should carefully consider the important change in the investment landscape and ask whether the return drivers looking forward will favor such methodologies. The following chart based on a 2008 study by Amit Goyal and Sunil Wahal titled "Selection and Termination of Investment Management Firms by Plan Sponsors", illustrates the mistake investors often make when chasing approaches that have been in favor.



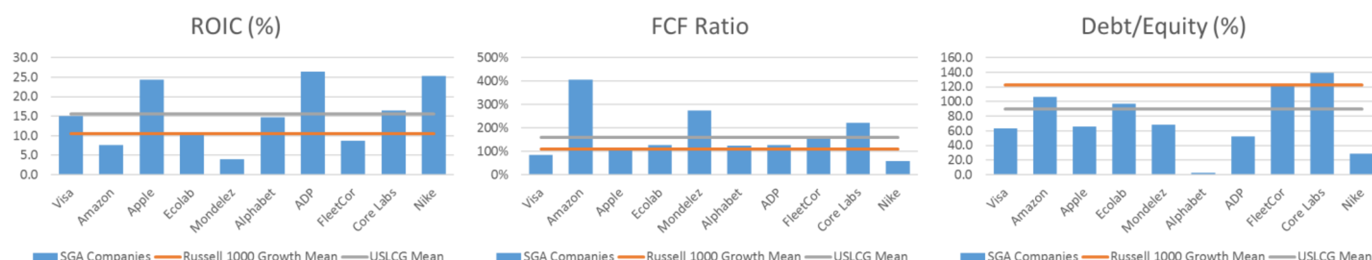
Source: "Selection and Termination of Investment Management Firms by Plan Sponsors". 2008, Amit Goyal and Sunil Wahal. Data presented represent pre and post-firing performance for investment managers that were fired for performance related reasons for the period between 1994-2003. Sample includes 185 managers for the three-year period, 240 for the two-year period, and 257 for the one-year period.

SGA's Approach to Portfolio Construction and Risk

In order to reduce risk while enhancing long-term returns, SGA builds concentrated portfolios from the bottom-up, focused on the highest confidence long-term secular growth opportunities our team can identify. While active share means little unless accompanied by a disciplined and effective stock selection process, the active share for SGA portfolios is consistently in the 80% plus area in the U.S. and 90% plus in Global, International and Emerging Markets. We limit the number of stocks in SGA's U.S. portfolio to no more than 30, and in our Global, International and Emerging Markets portfolios to no more than 35. This process encourages our team to critically reevaluate each existing holding daily and as we consider buying a new stock. We focus only on those companies that possess key quality, growth and valuation criteria, and take meaningful positions in those businesses so they have a major impact on our clients' returns. Whether the stock is part of an index or benchmark plays no role. We understand the tremendous value to be found in looking different and applying fundamental analysis to find those superior businesses which should stand out from the rest. By focusing on attributes that we have determined to be drivers of long-term growth, as opposed to the next 12-18 months where most managers' focus, and then taking advantage of short-term emotions and the subsequent pricing inefficiencies they present, we set the stage for enhancing our clients' relative and absolute returns.

While outperforming a given benchmark and our peers over a market cycle are important to the success of our clients and ultimately our business, beating an index benchmark every quarter is not something we are focused on. Vince Lombardi once said: "Winning is not a sometime thing, it is an all the time thing". There is no question that Lombardi's objective to win every game generated a favorable outcome for the football teams he managed. However, we believe that an equity manager who similarly seeks to win every quarter or even every year, will be forced to temporarily abandon key disciplines that are crucial to winning longer term. Doing so would force us to structure our portfolio in a way that would limit benchmark-relative risk but also our ability to generate the strong excess returns our approach has produced over the long-term. Specifically, it would force us to hold literally hundreds of stocks, many of which would not meet our business quality, growth or valuation criteria. Instead, we're willing to trade off increased short-term variability of returns around a benchmark to focus on characteristics that we believe lead to superior long-term capital appreciation. These attributes are simple in theory, but very difficult to actually find in a wide array of companies. We seek attractive absolute and relative returns by seeking companies which exhibit superior business qualities including pricing power, recurring revenue streams and global opportunity, above average sustainable growth rates and attractive cash flow based valuation. Our Qualified Company List of such businesses includes approximately 100 companies from around the globe. We actively cull that list on an ongoing basis to ensure that it only holds those companies we have the most confidence in.

While the process identifies companies with superior forecast long-term growth opportunities, it also ensures that our portfolios offer higher business quality characteristics. Each company has its own story and are in different stages of their respective growth cycles, however when considered in aggregate, offer more attractive growth and quality. The graphs below show key quality characteristics for the 10 largest positions in our U.S. portfolio relative to the Russell 1000 Growth Index as of 12/31/16.

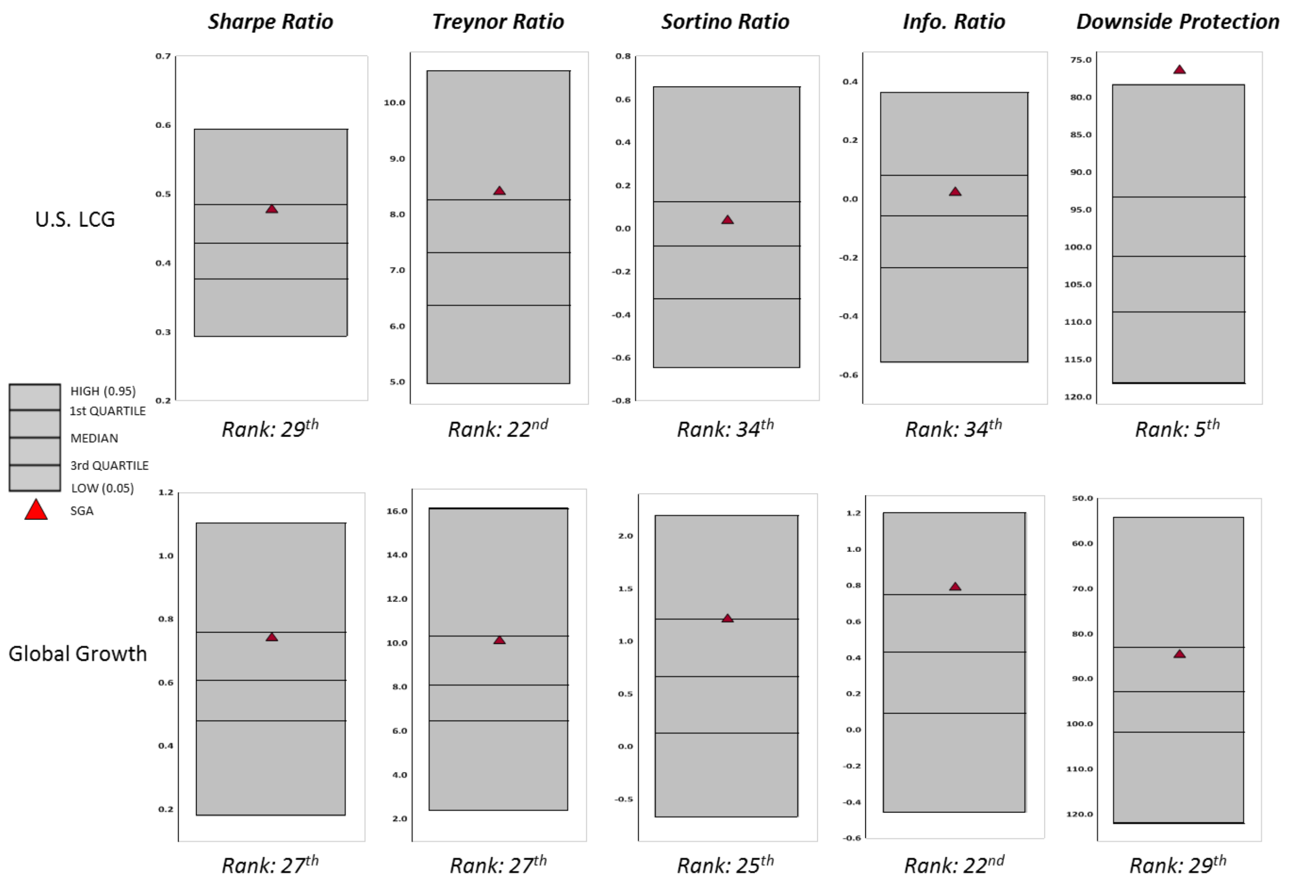


Source: FactSet. Mean is a simple average. Russell 1000 Growth Mean is the Mean ex-Outliers, defined as data between the 5th and 95th percentiles.

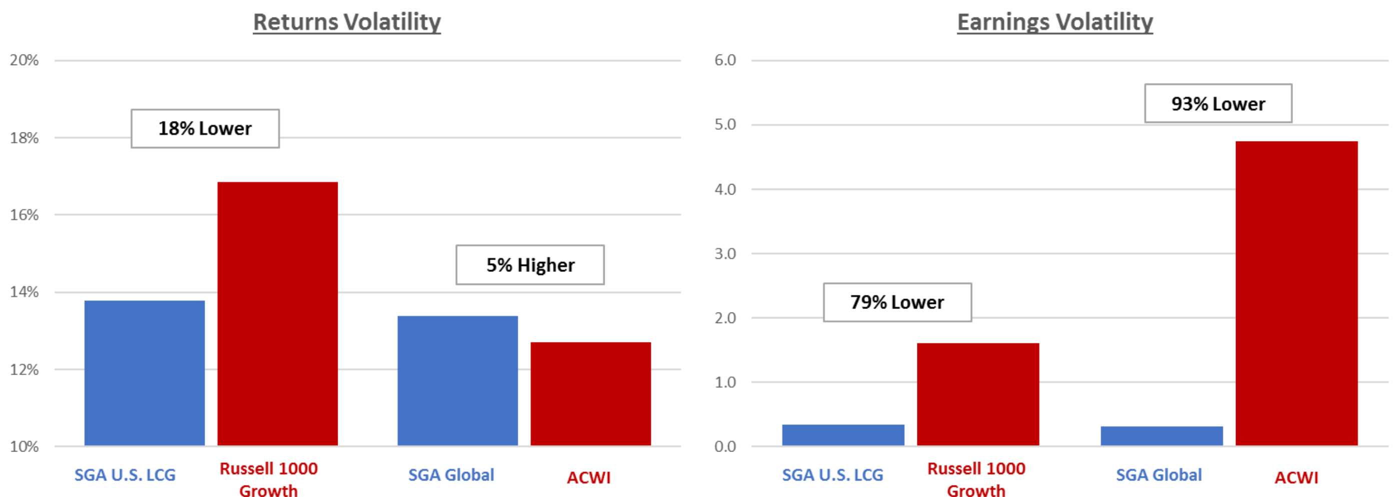
At SGA, we contend that the most important risk facing clients today is simply the risk that they will be unable to meet the return assumptions built into their pension, savings or endowment spending plans, either as a result of capital losses or due to insufficient asset appreciation. This is the risk that needs to be managed. **We think of risk in terms of the potential divergence in earnings and cash flow growth from our expected trajectory. In other words, our primary measure of risk is the volatility of operating results (earnings and cash flows) of the companies we own for our clients.** We spend our time evaluating the merits of individual businesses for our client portfolios, not focusing on current or expected systematic factors. We minimize risk by selectively focusing on businesses that benefit from sustainable advantages which in turn lead to both a high level *and* a low variability of growth. Additionally, we manage price risk by adhering to a cash flow based valuation discipline that respects the fact that overpaying for a great sustainable growth company may still result in disappointing investment returns. **Overall, we believe that the more limitations that are placed on the construction of a portfolio, which force it to mimic the characteristics or makeup of an index, the less risk of severe variations in returns around a benchmark but also the lower the chances that the portfolio outperforms that index over time.** While many institutional managers define risk in terms of the potential amount of deviation from a benchmark, **SGA believes risk is better defined in terms of the factors which influence the potential for capital loss that a client may face.** We seek better risk-adjusted returns for clients by understanding our businesses from a long-term perspective, focusing on the strategic growth drivers which we believe are

critical: pricing power, competitive advantages and the risks posed to them, profitability, and the risks to the business' ability to generate substantial free cash flow and earnings growth. Likewise, we have structured our approach to analyzing these key criteria to ensure that we protect our decision-making from natural human risks associated with the loss of objectivity and perspective, and the risk of buying or holding a stock which is excessively valued.

This more pragmatic, as opposed to theoretical focus on business quality and risk has led SGA's portfolios to experience lower absolute risk, lower earnings and return variability, and higher returns per unit of risk since their respective inceptions while generating attractive absolute and excess returns. By building portfolios of financially strong businesses that sell unique products or services that will allow them to maintain a higher than average rate of growth, over time we believe that the higher quality and superior growth rates will translate into greater stock price appreciation. Further, by purchasing these quality business characteristics and earnings growth rates at attractive valuations, we can enhance the return opportunity further and ultimately deliver attractive price appreciation relative to an index of average stocks. The following charts illustrate that the approach has led to reduced earnings and return volatility and higher return per unit of risk measures over time.



For U.S. LCG, data is from 1/1/2007 to 12/31/2016, universe is Investment Metrics U.S. Large Cap Growth Equity, peer size is 229. For Global Growth, data is from 2/1/2011 to 12/31/2016, universe is Investment Metrics Global Equity, peer size is 336. Source is FactSet SPAR. Peer universe data and SGA data based on gross returns and do not reflect the deduction of investment advisory fees. SGA's fees are available upon request and also may be found in Part 2A of its Form ADV. Actual fees charged to clients may vary depending on, among other things, the applicable fees schedule and portfolio size. It should not be assumed that future results will be reflective of past performance.



Returns volatility is measured as the absolute standard deviation of returns. Earnings volatility is measured as the coefficient of variation, which is the standard deviation of growth divided by the annualized growth rate. The coefficient of variation provides a standardized measure of risk per unit of growth. Data is from respective composite inception dates through 12/31/2016: SGA U.S. LCG inception is 4/1/2000, SGA Global Growth inception is 2/1/2011.

There are few businesses in this world that have the wherewithal to standout and generate strong top and bottom-line growth, but through our highly selective process we find such businesses bringing e-commerce to a barely penetrated Latin America, offering cloud computing solutions to businesses who can reduce their costs and improve productivity, bringing electronic communication capabilities to the masses and taking advertising dollars away from traditional media, developing new drugs to treat serious chronic conditions, helping companies across the world co-locate their data processing capabilities resulting in reduced latency and server costs, and bringing advanced banking practices to a growing populace currently served by inefficient national banks.

Earnings and Returns

As we all know, however, in the short-term and even over periods of sometimes a year or more, high business quality and superior earnings growth are not always rewarded. Often, this tends to be in periods of cyclical recovery when lesser quality companies are delivering high levels of earnings growth on small bases as they rebound. Or, in periods of severe uncertainty and fear when defensive shorter duration stocks such as Utilities, Telecom and Staples are rewarded, higher growth is often penalized. **During periods like these when our approach has been out of favor, SGA's portfolios have continued to generate consistent double-digit earnings growth and respectable absolute stock returns due to the superior predictability and attractive growth rates of our underlying businesses.** While history is no guarantee of future results, such periods of underperformance have traditionally provided highly attractive opportunities for SGA's long-term focused clients to add to their allocations to the strategy at lower prices and ultimately benefit their long-term returns.

SGA's U.S. portfolio has generated consistently higher rates of earnings per share growth in 14 of its 17 years (+13.6% versus +6.2%), since the inception of our U.S. Large Cap Growth composite, and has outperformed the Russell 1000 Growth Index in 9 of its 17 years, producing a compounded annual rate of return of 6.0% (5.2% net) versus 2.3% for the index on a gross of fee basis. Similarly, our Global portfolio has generated earnings per share growth substantially greater than the MSCI All Country World Index (ACWI) in each of the 6 years (+14.3% versus +1.5%) since its inception and outperformed the index with a compounded annual return of 10.1% (9.1% net) versus 6.2% for the index on a gross of fee basis over the period through December 31, 2016.

EPS Growth	SGA U.S. LCG	Russell 1000 Growth	SGA Global	MSCI ACWI
2000	13.8%	-12.3%		
2001	10.0%	-6.1%		
2002	14.4%	17.3%		
2003	14.7%	10.8%		
2004	16.1%	15.7%		
2005	15.2%	10.9%		
2006	13.7%	11.8%		
2007	11.6%	13.0%		
2008	6.4%	-1.8%		
2009	4.7%	-7.6%		
2010	22.4%	22.6%		
2011	18.7%	16.8%	22.3%	12.6%
2012	15.2%	-2.9%	14.6%	0.4%
2013	14.3%	9.5%	9.8%	2.1%
2014	11.4%	8.1%	11.1%	1.1%
2015	21.0%	5.3%	17.5%	-9.4%
2016E	9.4%	1.4%	11.0%	3.3%
Since Inception	13.6%	6.2%	14.3%	1.5%

Source: Bloomberg, FactSet, Baseline and SGA estimates and adjustments. 2016E as of 2/28/17. 2016E included in since inception calculations.

Summary

The method of portfolio construction used by investors should be consistent with their tolerance for risk and their return expectations. There is not one method of constructing portfolios which is appropriate for all needs. Depending on an investors' objective, they can invest in a passive index vehicle, or a portfolio that varies from a benchmark to varying degrees. Others may build a portfolio that looks nothing like a benchmark and provides return streams that are very different from that of an index. The approach an investor chooses should reflect their time horizon, tolerance for risk or return volatility and their sensitivity to active management fees in order to have the potential to generate higher rates of return. At SGA, we believe there is a tradeoff between structuring a portfolio to outperform an index with a high frequency and structuring them to outperform by a significant amount over time. We have shown that allowing a manager to make larger active decisions away from the benchmark in terms of sectors, industries, and stock weightings increases the short-term variability of returns around a benchmark but, if implemented via a disciplined and well tested approach focused on key long-term return drivers, can lead to more attractive returns versus passively investing in the benchmark. We believe using an investment strategy focused on opportunity and actual capital risk offers the best potential for generating superior returns over time. SGA's approach to building concentrated portfolios of our highest conviction opportunities has provided clients with lower risk portfolios, as measured by a number of risk metrics while generating attractive absolute and relative performance in our U.S. and Global portfolios. The results refute the idea that there is a direct correlation between increasing the level of risk in a portfolio and the level of return that should be expected.

The opinions expressed herein reflect the opinions of Sustainable Growth Advisers, LP and are subject to change without notice. The securities referenced in the article are not a solicitation or recommendation to buy, sell or hold securities. A complete list of holdings for SGA's U.S. and Global portfolios for the prior year can be obtained by contacting SGA at (203) 348-4742. This commentary is provided only for qualified and sophisticated institutional investors. SGA EPS Growth data is based upon portfolio companies non-GAAP operating earnings. 2016 EPS numbers are estimates as of 2/28/2017. The number of managers in the Investment Metrics U.S. Large Cap Growth Universe used for the tracking error quartile study ranges from 171 to 319 depending on the time period under consideration. Returns (gross and net of fees through 12/31/2016) of the SGA U.S. Large Cap Growth Composite and SGA Global Growth Composite. MSCI ACWI Return is Net Total Return (MSCI Net Total Return indexes reinvest dividends after the deduction of withholding taxes). Returns reflect the reinvestment of dividends, interest and other earnings. For interest and capital gains, SGA does not withhold taxes, for dividends SGA will withhold taxes as reported by the client's custodian. The Net Returns are calculated based upon the highest published fees that may be charged to SGA clients; 0.75% employing the U.S. Large Cap Growth equity strategy and 0.90% employing the Global Growth equity strategy, during the period under consideration. Actual fees charged to clients may vary depending on, among other things, the applicable fees schedule and portfolio size. SGA's fees are available upon request and also may be found in Part 2A of its Form ADV. SGA U.S. Large Cap Growth composite inception is 4/1/2000. SGA Global Growth composite inception is 2/1/2011. The performance record and data presented for periods prior to July 1, 2003 occurred before to the inception of SGA, and represents the portable performance record and data established by two of SGA's founders (and investment committee members) Gordon Marchand and George Fraise while affiliated with a prior firm. Past performance does not guarantee future results.