

Russell Research

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NOVEMBER 2011

Russell U.S. Small Cap Investment Discipline Indexes: Performance and portfolio characteristics

In September 2011, Russell launched the Russell U.S. Small Cap Investment Discipline Indexes (SC IDIs), extending the depth and variety of its investment discipline offerings.² Like the innovative and transparent Russell U.S. Large Cap Investment Discipline Indexes (LC IDIs) launched May 2011, the SC IDIs are designed to use rules-based security selection to produce performance similar to the average small or small-mid cap investment manager following a particular investment discipline.³ They are intended as tools to gain focused exposures to particular investment disciplines through index-linked products – such as exchange-traded funds – or to help define a given manager’s investment approach.

The Russell U.S. Small Cap Investment Discipline Indexes are:

- **The Russell U.S. Small Cap Aggressive Growth Index:** The Russell U.S. Small Cap Aggressive Growth Index targets companies with near-term forecasted earnings that are expected to increase at a faster rate than those of the average company’s earnings. This approach results in the index emphasizing those companies that are perceived to have the strongest prospects for near-term earnings growth.
- **The Russell U.S. Small Cap Consistent Growth Index:** The Russell U.S. Small Cap Consistent Growth Index targets companies with long-term earnings growth expectations that

¹ The author would like to thank Mark Paris, David Cariño, Guillermo Cano, Megan Roach, Steve Swartley and Curtis Yasutake for their contributions.

² For a discussion of the development, history and applications of the Russell Investment Discipline Indexes, see “Origins of the Russell Investment Discipline Indexes” by Jon A. Christopherson, *Russell Research*, October 2011.

³ For full details of the methodologies, see “Russell Investment Discipline Indexes (IDIs): Construction and Methodology,” September 2011, available at www.russell.com/indexes.

are above those of the broad market. The consistency of historical earnings growth is also a primary consideration for investors following this discipline. The emphasis on consistency of earnings also results in the index having exposure to companies with historically above-average levels of profitability and conservative balance sheets.

- **The Russell U.S. Small Cap Low P/E Index:** The Russell U.S. Small Cap Low P/E Index focuses on stocks that are trading at the lower ends of their ranges of historical trading multiples and/or trading at lower multiples than sector peers. Some investors look at a stock's earnings-to-price, book-to-price, cash-flow-to-price or sales-to-price multiples to assess its value. Over time, these multiples tend to trade within a range. Stocks that are trading at valuation ratios below their historical averages or those of their sector peers may be viewed as attractively valued.
- **The Russell U.S. Small Cap Contrarian Index:** The Russell U.S. Small Cap Contrarian Index focuses on stocks whose returns have meaningfully lagged the market and their sector peers. Contrarian stocks tend to have experienced this degree of underperformance due to deterioration in the company's business fundamentals. Investors following this discipline see meaningful upside in a stock's return if the business fundamentals of the company improve.

In this analysis, we examine the Small Cap Investment Discipline Indexes' simulated historical performance and equity characteristics.⁴ Our paper is organized as follows: we look at the SC IDIs' relationship to existing Russell indexes, including the LC IDIs. Next we examine the performance of the SC IDIs over time as compared to the Russell 2000[®] Index. We pay particular attention to how the four SC IDIs have performed in different market environments, focusing on their risk/return characteristics. In the final section we analyze each SC IDI's portfolio characteristics, examining historical exposures to the defining characteristics that typify each investment discipline.

We find that:

- SC IDI performance has varied over time, which can be explained largely by the fact that the individual SC IDIs respond differently to market conditions.
- Value-oriented investment strategies have tended to outperform growth-oriented strategies during down market conditions; the growth-oriented approaches have tended to outperform value-oriented IDIs in up market conditions.
- In most cases, the four SC IDIs have historically aligned more closely with the dominant characteristics that typify each investment discipline – as defined by the SC IDI methodology – than have their broad market, value or growth counterparts. The SC IDIs' exposures to these key variables have been relatively consistent over time.

⁴ The Russell U.S. Large Cap IDIs were launched in May 2011, and the Russell U.S. Small Cap IDIs were launched in September 2011. Data prior to launch is based on simulated production data dating from January 2005; data prior to January 2005 is provisional.

Relationship to existing Russell indexes

Relationship to the Russell 2000 U.S Small Cap Index

All Russell Investment Discipline Indexes (IDIs) are designed to reflect the average performance of a group of managers who share similar investment philosophies. Russell's manager researchers have long observed that small cap managers, in general, look for their investment ideas in, and select new stocks from, the Russell 2000. Russell researchers have also observed that snapshots of small cap manager holdings tend to include some stocks whose size exceeds the market capitalization of the largest stock in the Russell 2000. In order to reflect the holdings of the subset of managers being modeled, the SC IDI must begin with a superset of the Russell 2000 as the starting universe of stocks.

This observation flows naturally from several practical considerations. First, active managers of all categories hold some out-of-benchmark stocks. Small cap managers tend to hold onto "winners" – in other words, they tend to retain stocks that started out in the Russell 2000 but that grew in cap size to the point that they exceeded the Russell 1000/Russell 2000 breakpoint and transitioned to the Russell 1000.⁵ Second, active managers by necessity look for the more liquid names, which are found toward the larger end of their benchmark. Finally, as small cap managers achieve success and attract assets, their need for liquidity increases. If they do not invest in increasingly liquid stocks or own a growing number of holdings, then their transaction costs will inevitably rise.⁶

Manager behavior is not bounded by discrete cap breaks; therefore, it is possible for there to be overlap between stocks selected by the SC and the LC IDIs. This overlap is limited by certain stock-selection criteria embedded in each methodology, including the fact that the eligible universe for each of the LC IDIs is limited to the largest 450–800 companies in the Russell 1000 Index, while the SC IDIs are constrained to exclude up to the largest 10% of the Russell 2500 Index. The exact constraint is specific to each investment discipline.⁷

Relationship to the Large Cap IDIs

The Russell U.S. Small Cap IDIs differ from the Russell U.S. Large Cap IDIs in a number of ways. Although the SC IDIs' parameters are similar to those of the LC IDIs, the SC IDIs select only variables that are appropriate for the small cap stock universe.⁸ For this reason, there are six LC IDIs and four SC IDIs; the Growth at a Reasonable Price (GARP) and Equity Income LC IDIs have not been extended to the small cap space due to the unique nature of small cap stocks. GARP managers tend to focus on companies in stable growth stages; however, small cap stocks tend to be in earlier, less stable stages of growth than large cap stocks. For this reason, GARP managers tend to select stocks outside of the small cap universe. Equity Income managers, on the other hand, look for companies that pay stable dividends. Small cap companies tend not to pay out their earnings to shareholders, but to use earnings to fund their own growth. Thus, small cap stocks are excluded from the portfolios of equity income managers as well.

The Aggressive Growth and Consistent Growth SC IDIs are growth-oriented strategies, and the Low P/E and Contrarian SC IDIs are value-oriented strategies. These indexes are constructed on the basis of Russell's understanding of the preferences most often exhibited in the manager

⁵ See "The Russell 2000: Pure Small Cap" by Mat Lystra, *Russell Research*, July 2011.

⁶ This phenomenon is explained and documented in Jon Christopherson, Zhuanxin Ding and Paul Greenwood, "The Perils of Success: The Impact of Asset Growth on Small-Capitalization Investment Manager Performance," *Russell Research Commentary*, July 2001.

⁷ See *Russell U.S. Investment Discipline Indexes Construction and Methodology (2011)*.

⁸ See Christopherson (2011).

universe that subscribes to the particular investment discipline. Each SC IDI's methodology is designed to achieve – over long time horizons – a return profile similar to that of the average manager who uses that strategy. Over shorter time periods, however, the model may not always produce the behavior demonstrated by the average manager in the given investment approach. There are imperfections in any model, and modeling the behavior of an average manager necessitates replicating complex human behavior. For these reasons, the SC IDIs might not always approximate the average manager's behavior over shorter time periods.

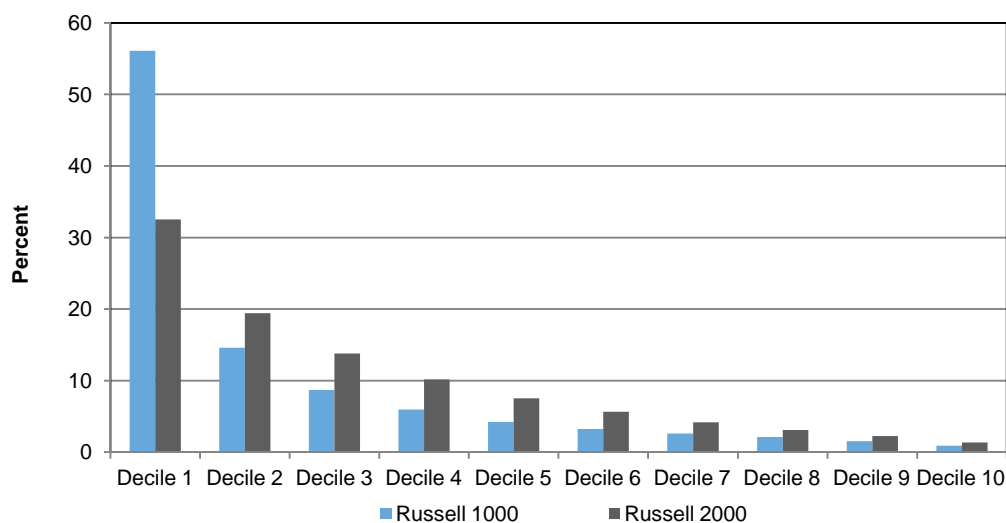
Relationship to style indexes

Despite the fact that we refer to certain SC IDIs as “value-oriented” or “growth-oriented,” the SC IDIs are not style indexes. Neither the LC IDIs nor the SC IDIs have all the characteristics of more general style indexes, such as the Russell 2000® Growth and Value indexes. The growth and value segments of Russell style indexes collectively add up to the parent broad market index; however, a collection of SC IDIs – or a collection of LC IDIs – will not sum up to a higher-level parent index. In other words, an individual SC IDI might fit within a general investment style, but the collection of SC IDIs is not intended to completely cover the broader style within which they fit.

Furthermore, Russell growth and value indexes are market capitalization-weighted, while the SC IDIs and the LC IDIs are not purely capitalization-weighted indexes. The investment discipline universes that the IDIs seek to reflect do not have capitalization-weighted portfolios when aggregated. Rather, investment discipline universe aggregate portfolios tend to be more equal-weighted. For this reason, the LC IDIs are built using a blend of capitalization weighting and equal weighting.

The SC IDIs all use a form of equal weighting, as appropriate, to approximate specific manager behaviors. Russell determined that equal-weighting strategies would more accurately reflect the average manager's decisions in the small cap space. Company weights in the small cap universe (as measured by the Russell 2000) tend to be more uniform than company weights in the large cap universe (as measured by the Russell 1000). As Figure 1 shows, the top decile of the Russell 1000 accounted for over 50% of the overall index weight, whereas the top decile of the Russell 2000 had only a 32% weight.

Figure 1 / Russell 1000 vs. Russell 2000 decile weights comparison by market cap



Source: Russell Indexes. Data as of 8/31/2011.

Historical performance analysis

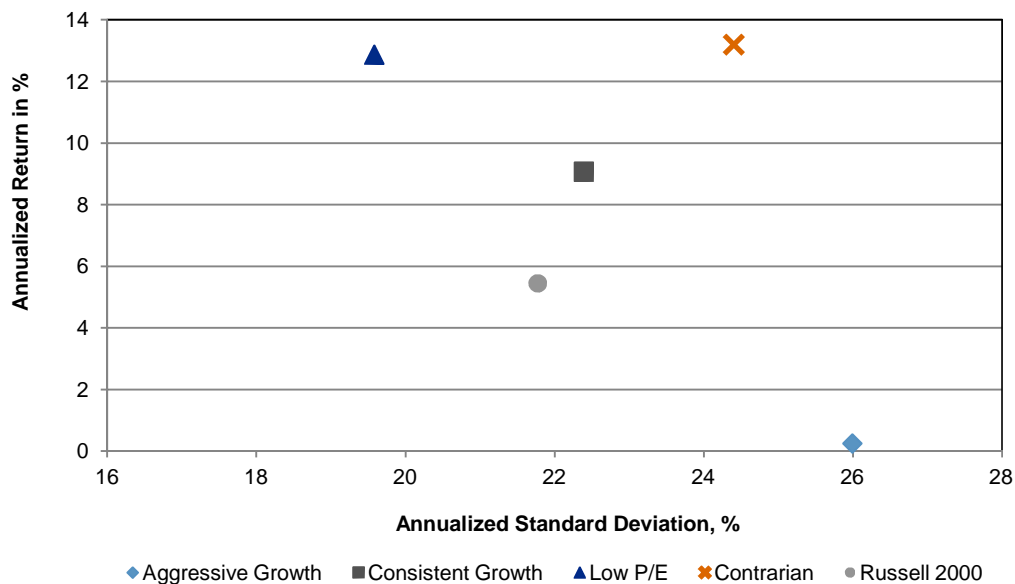
In this section we examine the historical performance of the four Small Cap IDIs over the aggregate period of analysis and during varying market states.

11-year aggregate performance

On average over the entire period of analysis, we find that although all of the SC IDIs produced positive returns over the entire sample period, the 11 years from January 2000 to December 2010 tended to favor value-oriented strategies, as we see in Figure 2⁹. The Contrarian and Low P/E SC IDIs – the two value-oriented SC IDIs – experienced higher annualized returns than did the two growth strategies or the Russell 2000 over the period of analysis. The Contrarian SC IDI had the highest annualized return of the group, while the Low P/E SC IDI had the lowest risk as measured by the standard deviation of returns.

The low annualized return and high risk generated by the Aggressive Growth SC IDI over the 11-year period relative to the other Small Cap IDIs and to the Russell 2000, noted in Figure 2, call for some explanation. The Aggressive Growth SC IDI approximates the Aggressive Growth manager strategy, which, by nature, tends to take on risk by pursuing companies with the potential for strong near-term growth. In Figure 2 it may appear that the Aggressive Growth strategy has tended to underperform the other SC IDIs; however, as we will see, there have been time periods when the Aggressive Growth SC IDI has performed well relative to the other SC IDIs.

Figure 2 / Risk and return of the SC IDIs, using monthly total returns from January 2000 to December 2010.

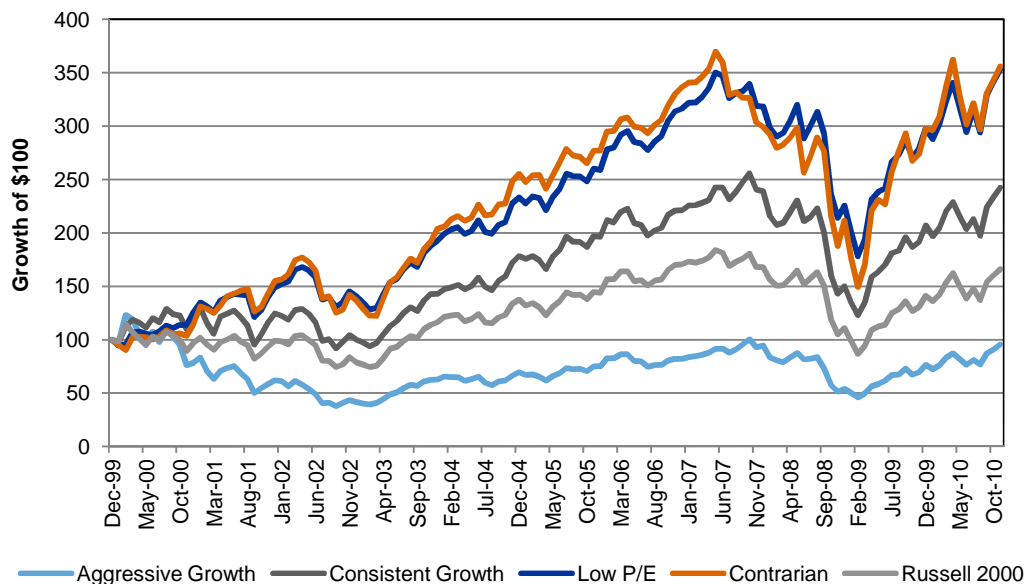


Source: Russell Indexes. Created with MPI Stylus™. Data as of 12/31/2010.

⁹ All returns quoted are in USD.

In Figure 3 we see how the four Small Cap IDIs have performed against each other and against the Russell 2000 on a cumulative basis from December 31, 1999, to December 31, 2010. We see that at the end of the period of analysis, the highest performer was the Contrarian Small Cap IDI, followed closely by the Low P/E Small Cap IDI. As of the end of December 2010, each of the SC IDIs had achieved cumulative returns greater than the base \$100 unit.¹⁰ Contrarian and Low P/E, the value-oriented strategies, had both exceeded the \$100 base by over 350%, while SC Consistent Growth had more than doubled the base \$100 initial value.

Figure 3 / Small Cap IDIs growth of \$100 from December 31, 1999, to December 31, 2010. Base \$100.00.



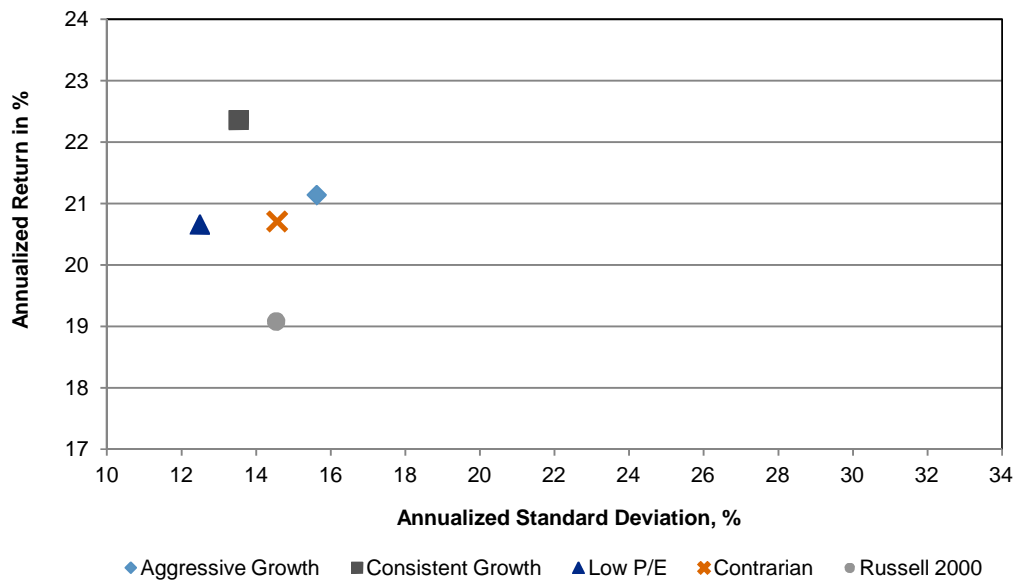
Source: Russell Indexes. Created with MPI Stylus™. Data as of 12/31/2010.

¹⁰ Aggressive Growth's level of growth was \$102.73 as of December 31, 2010.

Up and down markets

In Figure 4, we examine how the Small Cap IDIs have performed during up markets such as the bull market from October 2002 to October 2007. All of the SC IDIs outperformed the Russell 2000 on average during this bull market. However, we see that growth strategies – Aggressive Growth, and especially Consistent Growth – outperformed value strategies – Low P/E and Contrarian – on average during this period. We see that the Consistent Growth SC IDI was the clear winner during the October 2002 to October 2007 bull market, producing higher annualized return than the other indexes at comparable levels of risk. Again, this result is consistent with the expectation that growth strategies would outperform value strategies during bull markets.

Figure 4 / Bull market¹¹ risk/return characteristics using monthly total returns from October 2002 to October 2007



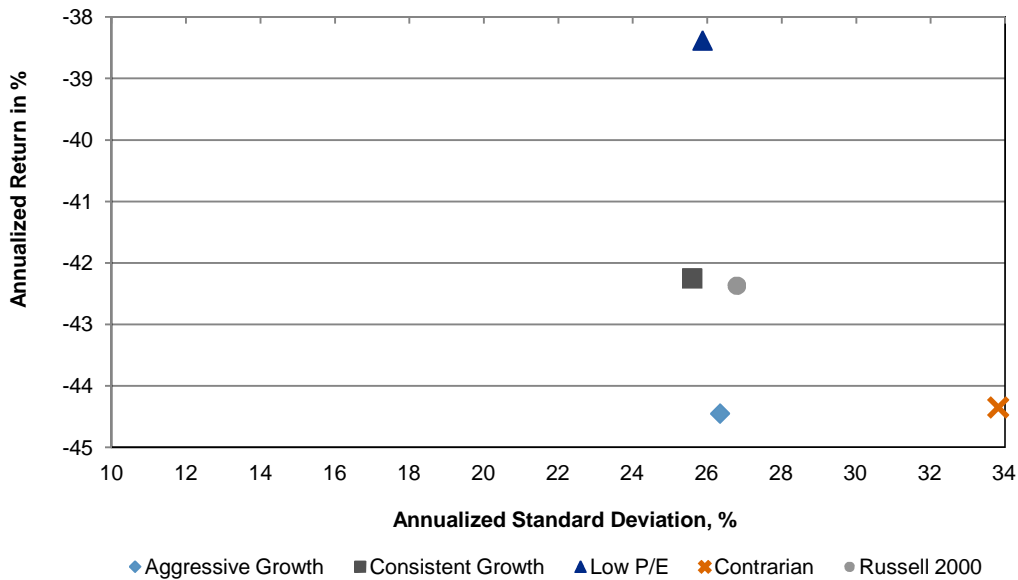
Source: Russell Indexes. Created with MPI Stylus™. Data as of 10/31/2007.

¹¹ Russell Investments defines a bull market as any market in which prices are advancing in an upward trend.

In Figure 4 we saw that there were periods when all of the SC IDIs outperformed the benchmark on average. However, in some market environments it is possible that none of the investment strategies deliver strong performance. We find that during the bear market from November 2007 to February 2009 (Figure 5), no index or SC IDI achieved positive annualized return, including the benchmark Russell 2000. The Low P/E SC IDI's "high" annualized return was still strongly negative, at -38.4%, while the benchmark Russell 2000's annualized return was only -42.5%.

The overall level of risk for the four Small Cap IDIs and the Russell 2000 was much higher during the 2007–2009 bear market than it was during the 2002–2007 bull market, despite the fact that annualized returns were noticeably lower in 2007–2009 than in 2002–2007. The median level of risk (as measured by annualized standard deviation) among the four Small Cap IDIs and the Russell 2000 was 14.5 during the 2002–2007 bull market and 26.3 during the 2007–2009 bear market (Figures 4 and 5). Between November 2007 and February 2009, three of the SC IDIs had risk comparable to each other and to the Russell 2000. One possible explanation for the clustered performance of the Small Cap IDIs during the bear market phase is that stocks tended to move together during the market crisis.¹² We note that during the downturn, the Low P/E SC IDI had the best performance, with risk comparable to or lower than that of the other SC IDIs.

Figure 5 / Bear market¹³ risk/return characteristics using monthly total returns from November 2007 to February 2009



Source: Russell Indexes. Created with MPI Stylus™. Data as of 2/28/2009.

¹² See "Diversification benefits of international and global markets" by Mary Fjelstad and Sarah Orzell, *Russell Research*, April 2009.

¹³ Russell Investments defines a bear market as a prolonged period of falling stock prices, usually marked by a decline of 20% or more. In a bear market, prices decline sharply against a background of widespread pessimism, growing unemployment or business recession.

Portfolio characteristics

In this section we explore the Small Cap IDIs' historical exposures to the dominant characteristics that typify each investment discipline. We compare each SC IDI's exposure to key variables derived from the Russell U.S. Investment Discipline Indexes methodology to the exposures of the Russell 2000, Russell 2000 Growth or Russell 2000 Value Indexes.¹⁴

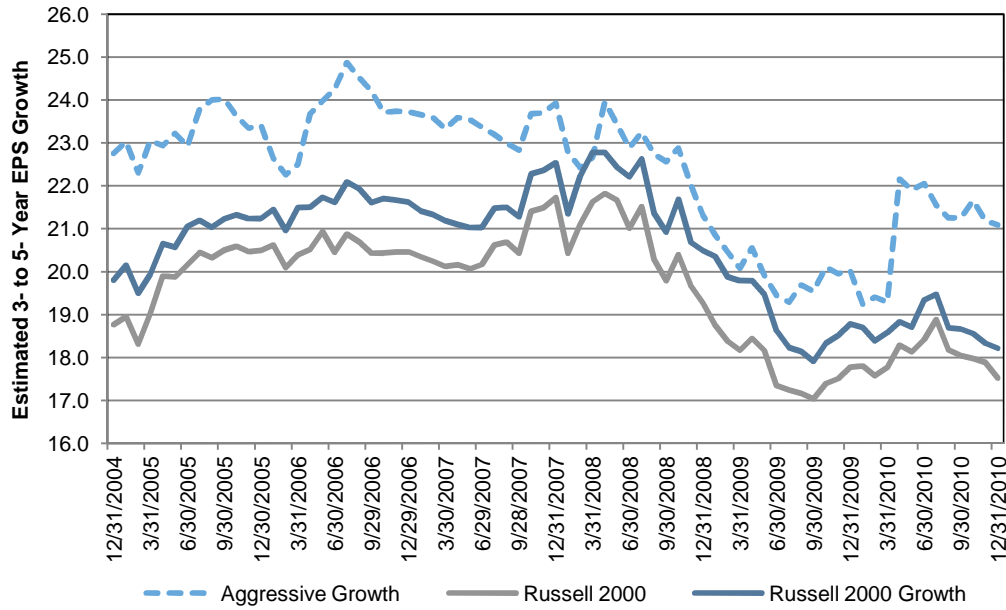
The Russell U.S. Small Cap Aggressive Growth Index

The Aggressive Growth SC IDI is designed to resemble the strategy of managers targeting companies whose near-term forecasted earnings are expected to increase more rapidly than the forecasted earnings of the average company in the market. This strategy reflects the assumption that high earnings growth is ultimately manifested in superior stock returns. The companies that Aggressive Growth strategies target tend to be in the accelerating stage of their growth cycle; they tend to have already passed the emerging growth stage, but still to be growing rapidly.

Due to its emphasis on company growth, a defining characteristic of the Aggressive Growth strategy is earnings growth. We would expect the Aggressive Growth SC IDI to have higher exposure to earnings growth, as measured by estimated mean I/B/E/S three- to five-year earnings per share growth, than the Russell 2000 or Russell 2000 Growth indexes. In Figure 6 we see that this expectation was borne out during most periods during the years analyzed. We see that between December 2004 and December 2010, the Aggressive Growth SC IDI's forecasted earnings growth exceeded the earnings growth of the Russell 2000 and Russell 2000 Growth indexes in most periods. The median monthly value for the Aggressive Growth SC IDI's forecasted earnings growth over the entire period of analysis was 22.8%, as compared to 21.0% for the Russell 2000 Growth and 20.2% for the Russell 2000. We also see that starting near the end of 2007, forecasted earnings growth began to drop for all three indexes, reflecting the impact of the global financial crisis on analysts' stock forecasts.

¹⁴ For full details of the methodologies, see "Russell Investment Discipline Indexes (IDIs): Construction and Methodology," September 2011, available at www.russell.com/indexes.

Figure 6 / Russell SC Aggressive Growth IDI vs. Russell 2000 – cap-weighted average of estimated three- to five-year EPS growth (%) between December 2004, and December 2010 (monthly observations)



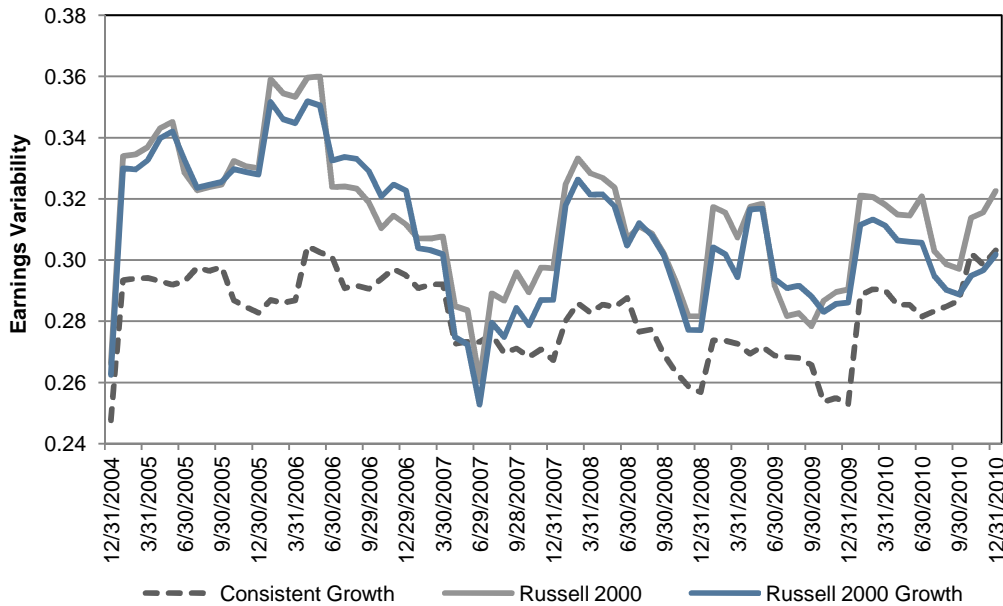
Source: FactSet. Data as of 12/31/2010.

Russell U.S. Small Cap Consistent Growth Index

Similarly to aggressive growth managers, consistent growth managers also favor rapid earnings growth as a key characteristic; however, consistent growth managers also consider earnings growth stability to be an important determinant of long-term earnings growth expectations. The emphasis on earnings consistency results in high exposure to companies with historically conservative balance sheets and above-average levels of profitability. Thus, consistent growth managers and indexes tend to target companies demonstrating below-average earnings volatility as measured by earnings variability, and we would expect the Consistent Growth SC IDI to display lower earnings variability than the Russell 2000 or Russell 2000 Growth indexes do.

We use the standard deviation of five-year historical earnings to measure the consistency of earnings growth for the Consistent Growth SC IDI and for the Russell 2000 and Russell 2000 Growth indexes. We find that during most periods between 2004 and 2010, Consistent Growth's earnings variability has been comparable to that of the Russell 2000 Growth Index and consistently lower than that of the Russell 2000 Index (Figure 7). The Consistent Growth SC IDI's median value for earnings variability over the entire period of analysis was 0.29, whereas the median value for earnings variability for both the Russell 2000 and the Russell 2000 Growth indexes was 0.31.

Figure 7 / Russell SC Consistent Growth IDI vs. Russell 2000 – cap-weighted average of earnings variability between December 2004, and December 2010 (monthly observations)



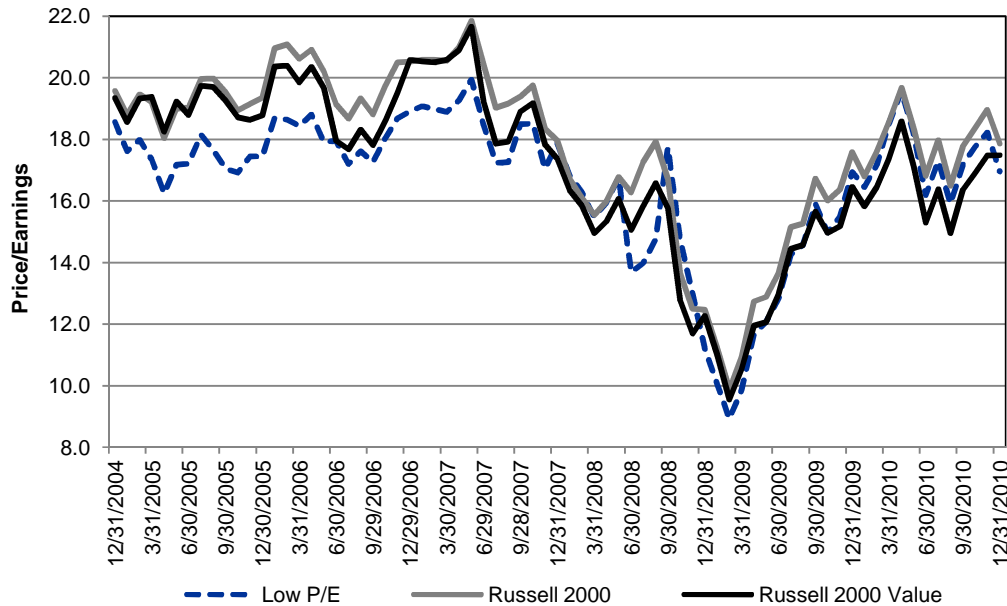
Source: FactSet. Data as of 12/31/2010.

Russell U.S. Small Cap Low P/E Index

The Small Cap Low P/E IDI is modeled on managers who target companies viewed as being attractively valued.¹⁵ In Figure 8 we compare the SC Low P/E IDI to the Russell 2000 and Russell 2000 Value indexes on the basis of their price/earnings ratios.

In Figure 8 we find that over the entire period, the SC Low P/E has had a lower median value for price/earnings ratio (17.2) than the Russell 2000 and Russell 2000 Value indexes (18.6 and 17.7, respectively) have had. We note, however, that the three indexes have tended to trend together over the period of analysis on a price/earnings basis. We see that the price/earnings ratios of all three indexes experienced a precipitous decline, beginning in September 2008 and bottoming out in February 2009 at a P/E ratio of less than 10.0. Prior to the financial crisis, we see that Low P/E consistently had lower price/earnings ratios than the other two indexes; since September 2009, the Russell 2000 Value Index has had somewhat lower price/earnings ratios than those of the Low P/E SC IDI.

Figure 8 / Russell SC Low P/E Index vs. Russell 2000 – cap-weighted average of price/earnings between December 2004, and December 2010 (monthly observations)



Source: FactSet. Data as of 12/31/2010.

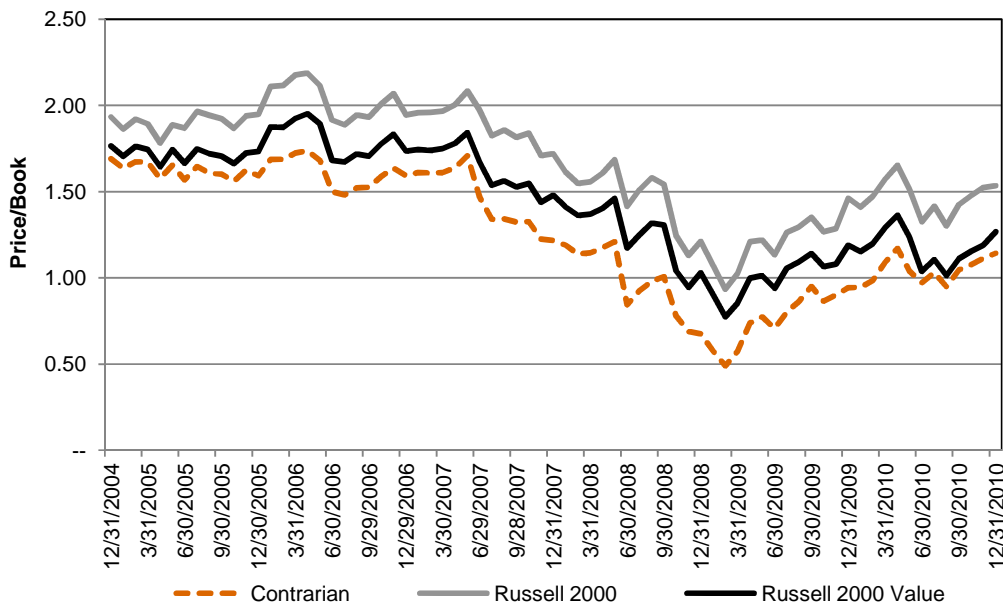
¹⁵ "Attractively valued" is defined as trading at low prices as measured by earnings/price, book/price, cash flow/price or trading at sales/price ratios that are at the lower ends of their historical ranges and/or trading at lower multiples than their sector peers.

Russell U.S. Small Cap Contrarian Index

The SC Contrarian IDI selects stocks whose returns have underperformed those of the broad market and/or their sector peers, usually due to deterioration in the companies' business fundamentals. Contrarian managers anticipate meaningful upside in a specific stock's performance if the company's business fundamentals improve. Stocks that are attractive to contrarian managers are often deeply depressed cyclical stocks such as out-of-favor former growth stocks or generally unprofitable companies. This poor performance is often accompanied by low valuation as measured by the ratio of price to tangible book value (P/B). It therefore makes sense to compare the SC Contrarian IDI's exposure to price/book relative to the Russell 2000 and Russell 2000 Value indexes.

Figure 9 confirms that the SC Contrarian IDI has historically had a lower price/book ratio than the Russell 2000 and Russell 2000 Value indexes have had. The SC Contrarian IDI's median price/book ratio over the entire period (1.22) was lower than the Russell 2000 Value's price/book ratio (1.46), confirming that the SC Contrarian IDI contained stocks with aggregate lower median price/book ratios than those of the stocks in the Russell 2000 Value Index. As expected, the Russell 2000's aggregate median price/book ratio (1.71) has been high relative to the SC Contrarian IDI and the Russell 2000 Value Index.

Figure 9 / Russell SC Contrarian IDI vs. Russell 2000 – cap-weighted average of price/book between December 2004, and December 2010 (monthly observations)



Source: FactSet. Data as of 12/31/2010.

Conclusion

In this analysis, we have found that the performance of the Russell U.S. Small Cap Investment Discipline Indexes has varied widely over time, due in part to the fact that the individual SC IDIs respond differently to market conditions. The value-oriented IDIs have tended to outperform the growth-oriented IDIs on average during down markets, but growth-oriented strategies have tended to outperform value-oriented approaches on average during up markets. Generally, the SC IDIs have historically aligned more closely with their dominant characteristics – key variables as defined by the SC IDI methodology – than have their broad-market, value or growth counterparts, and they have had consistent exposures over time. We note that there may be times of crisis when market conditions inhibit all investment disciplines from delivering strong returns. Nevertheless, this analysis has demonstrated that over the past 11 years, no single SC IDI has consistently outperformed its fellow SC IDIs; rather, there have been periods when, on average, all four Russell U.S. Small Cap IDIs have outperformed the benchmark Russell 2000.

**For more information about Russell Indexes call us or visit www.russell.com/indexes.
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First use: November 2011.

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