



Alameda County Employees' Retirement Association  
**BOARD OF RETIREMENT**

**INVESTMENT COMMITTEE/BOARD MEETING**

**ACERA MISSION:**

**To provide ACERA members and employers with flexible, cost-effective, participant-oriented benefits through prudent investment management and superior member services.**

Wednesday, January 9, 2019  
9:30 a.m.

| LOCATION  | COMMITTEE MEMBERS       |                                |
|---|-------------------------|--------------------------------|
| ACERA<br>C.G. "BUD" QUIST BOARD ROOM<br>475 14 <sup>TH</sup> STREET, 10 <sup>TH</sup> FLOOR<br>OAKLAND, CALIFORNIA 94612-1900<br>MAIN LINE: 510.628.3000<br>FAX: 510.268.9574 | ELIZABETH ROGERS, CHAIR | ELECTED GENERAL                |
|   | GEORGE WOOD, VICE CHAIR | ELECTED GENERAL                |
|   | DALE AMARAL             | ELECTED SAFETY                 |
|   | OPHELIA BASGAL          | APPOINTED                      |
|   | KEITH CARSON            | APPOINTED                      |
|   | TARRELL GAMBLE          | APPOINTED                      |
|   | JAIME GODFREY           | APPOINTED                      |
|   | LIZ KOPPENHAVER         | ELECTED RETIRED                |
|   | HENRY LEVY              | TREASURER                      |
|   | NANCY REILLY            | ALTERNATE RETIRED <sup>1</sup> |
|   | DARRYL L. WALKER        | ALTERNATE SAFETY <sup>2</sup>  |
|   |                         |                                |

Should a quorum of the Board attend this meeting, this meeting shall be deemed a joint meeting of the Board and Committee. The order of agenda items is subject to change without notice. Board and Committee agendas and minutes are available online at [www.acera.org](http://www.acera.org).

**Note regarding public comments:** Public comments are limited to four (4) minutes per person in total.

**Note regarding accommodations:** The Board of Retirement will provide reasonable accommodations for persons with special needs of accessibility who plan to attend Board meetings. Please contact ACERA at (510) 628-3000 to arrange for accommodation.

<sup>1</sup> Alternate Retired Member (Votes in the absence of the Elected Retired Member, or, if the Elected Retired Member is present, then votes if both Elected General Members, or the Elected Safety Member and an Elected General Member, are absent.

<sup>2</sup> Alternate Safety Member (Votes in the absence of (1) the Elected Safety, (2) either of the two Elected General Members, or (3) both the Retired and Alternate Retired Members).

# ***INVESTMENT COMMITTEE/BOARD MEETING***

**NOTICE and AGENDA, Page 2 of 2 – Wednesday, January 9, 2019**

**Call to Order:** 9:30 a.m.

## **Action Items: Matters for discussion and possible motion by the Committee**

1. Interview of the Finalists for ACERA's U.S. Small Cap Growth Manager Search – Domestic Equities and Possible Motion by the Investment Committee to Recommend one Finalist to the Board

9:30 – 11:30

Doug Foreman, Virtus – Kayne Anderson Rudnick  
Todd Beiley, Virtus – Kayne Anderson Rudnick

Stephanie Braming, William Blair  
Ward Sexton, Portfolio Manager, William Blair

Margaret Jadallah, Verus Advisory Inc.  
Clint Kuboyama, ACERA  
Thomas Taylor, ACERA  
Betty Tse, ACERA

## **Information Items: These items are not presented for Committee action but consist of status updates and cyclical reports**

1. Discussion on Asset – Liability Introduction and Enterprise Risk Tolerance

Barry Dennis, Verus Advisory Inc.  
Margaret Jadallah, Verus Advisory Inc.  
Betty Tse, ACERA

2. Proposed Investment Committee Workplan for 2019

Agnes Ducanes, ACERA  
Betty Tse, ACERA

## **Trustee Remarks**

## **Public Input (Time Limit: 4 minutes per speaker)**

## **Future Discussion Items**

## **Establishment of Next Meeting Date**

February 13, 2019 at 9:30 a.m.

**ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

475 14th Street, Suite 1000, Oakland, CA 94612

800/838-1932


510/628-3000

fax: 510/268-9574

www.acera.org

To: Members of the Investment Committee

Date: January 9, 2019

From: Betty Tse, Chief Investment Officer 

Subject: Interview of the Finalists for ACERA's U.S. Small Cap Growth Manager Search – Domestic Equities and Possible Motion by the Investment Committee to Recommend one Finalist to the Board

**Recommendation:**

Based on the re-scoring, Staff recommends that the Investment Committee select William Blair as ACERA's next U.S. Small Cap Growth Equity manager. Staff, however, believes that Virtus-KAR (Kayne Anderson Rudnick) and William Blair are both suitable candidates, who have met all the search requirements.

**Background:**

To recap the search for a U.S. Small Cap Growth Equity Manager, Staff and Verus facilitated a focus list, selected the top four candidates (Granahan, Pier, Virtus-KAR, William Blair), and conducted onsite visits and further due diligence in October and November of 2018. Staff and Verus re-examined the top four candidates' organization (ownership, staffing), investment team (strategy, research capabilities), performance and risk (consistency, sustainability), and proposed fees prescribed on the Recommended Evaluation Matrix, as well as the mandate's Minimum Qualifications. Consequently each of the top four investment management companies were re-ranked and Staff, with input from the Investment Committee, advanced the two leading candidates – Virtus-KAR and William Blair- for the Committee to interview and make a final selection. The estimated size of the mandate as of 11/30/2018 was approximately \$111 million<sup>1</sup>.

Summary of the top two candidates from the re-scoring, presented in the December 2018 ICM:

| <i>Small Cap<br/>Growth<br/>Strategy</i> | Updated Scores ( <i>out of 100</i> ) |       |             |        |      |
|--|--------------------------------------|-------|-------------|--------|------|
|  | Staff                                | Verus | Average     | Change | Rank |
| Virtus-KAR                               | 82.5                                 | 73.0  | <b>77.8</b> | 3.8    | 2    |
| William Blair                            | 83.3                                 | 79.8  | <b>81.5</b> | 7.4    | 1    |

\*All scores were presented at the December 12, 2018 ICM

<sup>1</sup> Subject to market fluctuations and rebalancing of the U.S. Equity Asset Class. Small Cap Growth will be rebalanced to 5% of the total 28% allocation to U.S. Equity.

**Discussion:**

Staff and Verus Advisory ranked Virtus-KAR and William Blair the top two highest ranking candidates as a result of several factors. Both investment management companies manage sufficient size of institutional assets (AUM), and possess the tenure (history) and resources to establish specialization in their respective professional functions. Both firms have two co-PMs, dedicated research analysts, trading desks, and strong risk compliance and operational structures. Both firms' employees are aligned with their clients in terms of their interest in managing the respective portfolios, their focus, as well as manager compensation (manager fees); both dedicated teams manage their respective small cap growth strategies within a larger investment management organizations either as a publicly traded company (Virtus KAR) or as an employee-owned firm (William Blair). Please see the attached Executive Summaries.

Below are summaries of the most important considerations for each finalist.

**Virtus Investment Partners, Inc. –Virtus KAR Small Cap Sustainable Growth**

Virtus-KAR's Small Cap Sustainable Growth Strategy is focused exclusively on investing in "quality" companies defined most notably as having a sustainable competitive advantage (i.e. cost leadership, high switching costs, etc.) and is managed by a well-staffed, seasoned team. The companies that comprise this portfolio aren't typically the high-flying, crowded, momentum types of equities that can populate many small cap growth portfolios. Instead they are more stable businesses with less earnings volatility that are typically held over a long period of time (e.g., typically 3-to-5 years). What results is a portfolio that has consistently beaten the Russell 2000 Growth benchmark with less volatility than the benchmark, high risk-adjusted returns, and high alpha generation. These factors fashion this strategy with significant benchmark risk (i.e. a high tracking error of 8.0 over the last ten years). However, while benchmark risk is high, the overall risk of the portfolio, as measured by return volatility and Sharpe Ratio, is very low.

The strategy's relatively large AUM of \$6.1 billion, concentrated positioning, and high weighted average market capitalization (\$6.48 billion as of 11/30/18) are differentiating characteristics that are of some concern to staff. However, after analyzing the impact these characteristics will have on the strategy's performance within ACERA's U.S. Equity Asset Class, Staff feels that they are manageable. Overall, Staff believes Virtus-KAR's Small Cap Sustainable Growth Strategy would perform well, particularly in flat to down equity markets, but feels William Blair's Small Cap Growth strategy is the more balanced choice for ACERA.

**William Blair Investment Management, LLC – Small Cap Growth**

William Blair's Small Cap Growth strategy is a well-rounded strategy run by a highly resourced and experienced team. While it may not be the best in many evaluation categories such as its short-term

performance, it is very good at most of these categories, if not all, of them. The strategy's longstanding investment process, which focuses on identifying and investing in companies with durable business franchises with superior long-term earnings growth, is effective at consistently beating the benchmark and generating alpha without taking too much benchmark risk (i.e. tracking error of 6.2% over the last 10 years). Moreover, the well-diversified portfolio has consistently outperformed the Russell 2000 Growth Index while holding up better to the downside. The strategy's \$1.2 billion AUM, benchmark-like weighted average market cap (\$2.9 billion), and overall style purity also position it favorably to meet ACERA's small cap growth mandate. Overall, the strategy's balance across all major evaluation criteria is the main reason Staff recommends it for ACERA's small cap growth mandate.

### **Other Considerations:**

| <b>Period Ending 11/30/2018</b>                    | <b>Virtus-KAR</b> | <b>William Blair</b> |
|--|-------------------|----------------------|
| Total AUM  | \$26.8 Billion    | \$62.2 Billion       |
| Strategy AUM                                       | \$6.1 B           | \$1.2 B              |
| PM/Analyst   | 2 / 6             | 2 / 8                |
| Number of Holdings                                 | 26 (20-35)        | 88 (70-90)           |
| Annual Turnover                                    | 21.0%             | 61.3%                |
| Tracking Error <sup>i</sup> (5/10 year)            | 8.2 / 8.0         | 5.4 / 6.2            |
| Information Ratio <sup>ii</sup> (5/10 year)        | 0.8 / 0.7         | 1.1 / 0.6            |
| Upside/Downside Capture <sup>iii</sup> (5/10 year) | 108/58 & 92/62    | 97/72 & 100/82       |
| Active Share <sup>iv</sup> (10 year)               | 98.26             | 92.45                |

### **Conclusion:**

In conclusion, Staff favors William Blair over Virtus-KAR due to William Blair's well-rounded profile across all meaningful evaluation categories. However, Staff also recognizes that both firms are highly qualified and well positioned to successfully execute ACERA's U.S. Small Cap Growth mandate.

### **Next Steps:**

Based on the outcome of the Investment Committee and Board decision, Staff will follow-up with background checks, legal due diligence and contract negotiations. Pending completion thereof, Staff will transition the assets with the current manager to the new U.S. Small Cap Growth Equity manager.

### **Attachments:**

1. Executive Summary – Virtus – KAR Small Cap Sustainable Growth.
2. Executive Summary – William Blair Small Cap Growth
3. Verus Advisory, Inc. Memo

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<sup>i</sup> **Tracking error** is the divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark. Tracking error is reported as a standard deviation percentage difference, which reports the difference between the return an investor receives and that of the benchmark he was attempting to imitate.

<sup>ii</sup> **The information ratio (IR)** is a measure of portfolio returns above the returns of a benchmark, usually an index, to the volatility of those returns. The information ratio (IR) measures a portfolio manager's ability to generate excess returns relative to a benchmark, but it also attempts to identify the consistency of the investor. It is calculated by taking the excess return (expected return less the benchmark return) divided by the standard deviation of the active return. The higher the information ratio, the better, but generally speaking, an information ratio in the 0.40 - 0.60 range is considered quite good.

<sup>iii</sup> **Upside and downside capture ratios** measure the extent to which a fund's monthly returns reflect those of the underlying market, on average. The upside capture ratio only measures data for months in which returns were positive, while the downside ratio only concerns months in which losses were sustained.

<sup>iv</sup> **Active Share** is a measure of the percentage of stock holdings in a manager's portfolio that differs from the benchmark index. The researchers conclude managers with high Active Share outperform their benchmark indexes and Active Share significantly predicts fund performance.



## EXECUTIVE SUMMARY

### Virtus –Kayne Anderson Rudnick (KAR)

#### **General Information**

|                               |   |
|-------------------------------|---|
| Product Name:                 | Small Cap Sustainable Growth  |
| Strategy AUM                  | \$6.1 Billion (as of 11/30/18)  |
| Total Firm AUM                | \$105.6 Billion (Virtus Investment Partners, Inc.) (as of 9/30/18);<br>\$25.1 Billion (Kayne Anderson Rudnick) (as of 11/30/18) |
| Number of Intuitional Clients | 22 (in product) and 325 (firm wide)   |

#### **Investment Management**

|              |   |
|--------------|---|
| Organization | Virtus Investment Partners, Inc., a publicly traded company (NASDAQ: VRTS), operates a multi-manager asset management business, comprising a number of several individual affiliated managers, each having its own investment process and brand, and the services of unaffiliated subadvisors. One of the affiliated investment managers is Kayne Anderson Rudnick, LLC (KAR); an autonomous, boutique investment firm. |
|--------------|---|

|           |  |
|-----------|--|
| Ownership | KAR is a wholly-owned, 100%, by Virtus Investment Partners |
|-----------|--|

|                             |  |
|-----------------------------|--|
| Portfolio Manager(s)/Tenure | <ul style="list-style-type: none"><li>• Todd Bailey, CFA (19Y Exp., 16Y Firm) – Portfolio Manager and Senior Research Analyst.</li><li>• Jon Chritensen, CFA (23Y Exp., 17Y Firm) - Portfolio Manager and Senior Research Analyst.</li><li>• Please see Bio's in company's presentation.</li></ul> |
|-----------------------------|--|

|                    |  |
|--------------------|--|
| Personnel Turnover | Over the last three years, the investment team has added two research analysts (Sean Dixon and Adam Xiao) and lost one research analysts (Chris Benway – relocated with family). |
|--------------------|--|

#### **Investment Strategy**

|                       |  |
|-----------------------|--|
| Investment Philosophy | KAR's investment philosophy is centered on the belief that owning high-quality businesses, purchased at attractive prices, will achieve attractive risk-adjusted returns over a complete market cycle. |
|-----------------------|--|

|                      |  |
|----------------------|--|
| Investment Objective | KAR defines high-quality as a qualitative business characteristic that enables a company to resist competitive forces and thereby produce high and enduring profitability. The portfolio managers and research team apply thorough fundamental analysis to evaluate a company's competitive attributes. Investments are made with a long term, private-ownership orientation, i.e., buying the company, not the stock. |
|----------------------|--|

|                     |   |
|---------------------|---|
| Investment Strategy | KAR seeks to invest in 1) High-Quality business with durable competitive advantages; 2) Pay reasonable/attractive price; and, 3) Select only the most compelling ideas. |
|---------------------|---|

|                    |  |
|--------------------|--|
| Investment Process | Finding new investment candidates is an important part of KAR's research process. They utilize a variety of methods in research which include but are not limited to: quantitative screens, ongoing research of existing holdings, industry research, company meetings and site visits, investment |
|--------------------|--|

conferences and third-party sources. Valuation is not a key consideration at this stage.

A core tenet of the firm's investment philosophy is that thorough, first-hand fundamental research is essential in order to make sound investment decisions. The firm places great emphasis on the research component of its investment process and commits extensive resources to this effort. They evaluate a company's competitive advantage, as well as many other factors: e.g., its financial character. KAR assess the ability of a company's management team to allocate capital in a sensible, shareholder-friendly manner. KAR will then further evaluate the market price of the company based on long term investment returns.

## **Risk Management**

### **Risk Control**

The firm's risk control methodology involves both managing risk and monitoring risk. The primary risk control factor is the firm's focus on companies it identifies as "high quality", with low business and financial risks.

The portfolio is diversified by economic sector and by individual security weights. Sector weights are managed to within typically 10% variance to the benchmark and reviewed by the CIO if over 10%. Position weights are typically initiated at 3% to 4% of the portfolio. A "Position Review" process is conducted when a portfolio holding declines 20%, absent a broad market decline. The firm applies risk management guidelines when entering and exiting portfolio holdings. These transactions are monitored daily.

Performance analytics, portfolio attribution and risk reports are provided to the portfolio managers by the analytics team. These metrics allow the portfolio managers to quantify their investment decisions, understand the drivers of the investment returns and portfolio risk characteristics and evaluate any factor exposures.

KAR maintains a Risk and Compliance Committee which meets quarterly to independently evaluate portfolio risk exposures. Additionally, the Committee is responsible for the effective management of compliance, operational, reputational, and portfolio management risk throughout the Firm, in line with the risk appetite and the governance, risk and control framework of the Firm.

### **Investment Constraints**

The portfolio is relatively focused with approximately 20 to 35 companies. Individual holdings are diversified across economic sectors with a sector allocation discipline that allows portfolio sector weights to vary within +/- 10% of the Russell 2000 Growth Index, utilizing the Russell sector classification.

Individual position weights typically range between 3% and 4%. The maximum weight of a position is 10% (at market value).

Approximately 80% of the portfolio includes companies, at the time of initial purchase for the strategy, that are within the market cap range of the Russell 2000 Growth Index on a rolling 3-year basis. The portfolio may invest in companies not in the benchmark.



## Performance – KAR Small Cap Sustainable Growth

| Period Ending 11/30/2018<br>(Annualized Percentages) | <u>YTD*</u> | <u>1-Year</u> | <u>3-Year</u> | <u>5-Year</u> | <u>7-Year</u> | <u>10-Year</u> |
|--|-------------|---------------|---------------|---------------|---------------|----------------|
| Strategy Gross Returns                               | 18.29%      | 22.94%        | 26.22%        | 18.27%        | 19.96%        | 21.88%         |
| Strategy Net Returns                                 | 17.23       | 21.73         | 25.02         | 17.13         | 18.80         | 20.69          |
| Russell 2000 Growth                                  | 2.69        | 2.81          | 9.97          | 8.22          | 13.21         | 15.55          |
| Excess Returns (Net-R2G)                             | 14.54       | 18.92         | 15.05         | 8.91          | 5.59          | 5.14           |

| Calendar Years*           | <u>YTD</u><br><u>(11/30/18)</u> | <u>2017</u> | <u>2016</u> | <u>2015</u> | <u>2014</u> | <u>2013</u> |
|---------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|
| Strategy Gross Return     | 18.29%                          | 39.03%      | 26.11%      | 2.57%       | 6.47%       | 39.89%      |
| Strategy Net Return       | 17.23                           | 37.69       | 24.88       | 1.55        | 5.40        | 38.53       |
| Russell 2000 Growth Index | 2.69                            | 22.17       | 11.32       | -1.38       | 5.6         | 43.3        |
| Excess Returns (Net-R2G)  | 14.54                           | 15.52       | 13.56       | 2.93        | -0.2        | -4.77       |

\*Not Annualized.

### Portfolio Characteristics as of 11/30/2018

Investment Style  
Benchmark

U.S. Small Cap Growth  
Russell 2000 Growth

|                                | <u>Portfolio</u>  | <u>Benchmark</u> |
|--------------------------------|-------------------|------------------|
| Number of Holdings/Issues      | 26                | 1,239            |
| Average Annual Turnover        | 22.9%             | n/a              |
| Market Cap at Purchase/Current | \$2.58B / \$6.48B | n/a              |
| Sharpe Ratio                   | 0.51              | 0.20             |
| P/B Ratio                      | 5.99              | 3.99             |
| P/E Ratio                      | 35.2              | 51.3             |

### Investment Management Fees

Proposed Fee(s)

Separate Account: 0.70% on the first \$100 million; 0.65% on the balance. For example, the management fee on \$111.0m = \$771,500.00 / year



## EXECUTIVE SUMMARY

### William Blair Small Cap Growth

#### General Information

|                               |                                     |
|-------------------------------|-------------------------------------|
| Product Name:                 | Small Cap Growth                    |
| Strategy AUM                  | \$1.22 billion                      |
| Total Firm AUM                | \$62.1 billion.                     |
| Number of Intuitional Clients | 18 (in product) and 423 (firm wide) |

#### Investment Management

##### Organization

Founded in 1935 by William McCormick Blair in Chicago, William Blair's businesses consists of Institutional Investment Management, Private Wealth Management, Investment Banking, Research, and Institutional Sales and Trading. (Total AUM: \$62.1 billion.) Since October 2017, the Institutional Investment Management business has been under the leadership of Stephanie Braming, Head of Global Investment Management, and a 5-person executive leadership team. The investment management teams –including the Small Cap Growth strategy, are solely focused on active management and employ disciplined, analytical research processes across a wide range of strategies, including U.S. equity, non-U.S. equity, fixed income, and multi-asset.

##### Ownership

100% active employee-owned. Ownership is broadly based among the 184 active Partners.

##### Portfolio Manager(s)/Tenure

- Michael Balkin (27Y Exp., 24Y Firm): Portfolio Manager on the Small Cap Growth team. Michael originally joined the William Blair Small Cap Growth team as a Portfolio Manager in late 1999, but he rejoined William Blair in 2008 after three years as a Portfolio Manager and CIO at another firm.
- Ward Sexton, CFA (19Y Exp., 19Y Firm), Portfolio Manager and a Senior Research Analyst. Before promoted to PM in 2016, he was an Associate Portfolio Manager on the Small Cap Growth strategy and a Research Analyst.
- Please see Bio's in company's presentation.

##### Personnel Turnover

Karl Brewer (21-years) Portfolio Manager of Small Cap Growth strategy, retired 12/1/2017. In summary of the past five years, the team has added five investment professionals and lost three.

#### Investment Strategy

##### Investment Philosophy

William Blair employs a disciplined quality growth investment philosophy to create alpha for its clients. They believe that the market is inefficient at discerning between an average growth stock and a quality growth stock. Within this universe of quality growth companies, William Blair believes there are three main market inefficiencies that allow them to create alpha for its clients: 1) Traditional Quality Growth – This is a time horizon inefficiency. 2) Fallen Quality Growth – This is knowledge based inefficiency. 3) Undiscovered Quality Growth – Companies that have little coverage from Wall Street.

Investment Objective

William Blair's Small Cap Growth strategy seeks to outperform the Russell 2000 Growth Index over a full market cycle with a goal of 300+ basis points of excess return over the life-cycle of the market (5-10 years) (gross of fees).

Investment Strategy

This Small Cap Growth strategy does not own non-US or emerging market names. The market cap remain in line with that of the Russell 2000 Growth Index.

Investment Process

William Blair leverages its investment team members' networks and experience and using quantitative screens, to narrow the universe of 2,000+ stocks into an Eligibility List. Both the analysts and portfolio managers agree on a high-priority research idea from the List, the stock is then placed on the Research Agenda. Companies on the Research Agenda undergo intensive due diligence, including company visits, focused discussions with management around issues critical to the investment thesis, building financial forecasts and conversations with independent sources of relevant insight (e.g. competitors, customers, etc.) to test their investment thesis. Once vetted, the analyst concludes the analysis of the company and makes a stock recommendation rating of Outperform, Neutral or Underperform. Portfolio construction decisions are made on an ongoing basis by the portfolio management team. Allocations and decisions are collaboratively made following in-depth discussions regarding relative merits of current portfolio holdings versus each other and potential candidates that may have a more attractive return profile.

**Risk Management**

Risk Control

While William Blair has a well-staffed compliance department and the standard enterprise risk controls, selection of quality companies with strong management, a sustainable business model, and solid financials weighs heavily on risk control within the portfolio. Furthermore, William Blair evaluates a stock's risk/reward through traditional and non-traditional valuation metrics, as well as market psychology/investor sentiment.

William Blair measures and manages risk at both the absolute and benchmark-relative levels. They believe the best way to control absolute risk (standard deviation) is by having the best possible understanding of companies and of a stock's valuation. Controlling business risk and valuation risk in the portfolio lessens the overall volatility of portfolio returns and also helps manage stock-specific downside risk. Position size management, including the 5% position size limit, helps reduce absolute risk as well.

As it relates to liquidity, William Blair has a well-diversified portfolio with 70-90 holdings on average and a 5% maximum position size. This results in a high active share (92.45 as of 11/30/18) without sacrificing liquidity. Liquidity is carefully monitored on a portfolio-level, firm-level, and security-level, with conservative assessments made to ensure ample liquidity in this strategy.

**Investment Constraints**

Typical Initial Position: 0.5 – 1.25%

Position Limit at Market: 5%

Portfolio Holdings: 70-90

Market Cap Range: Primarily below the high-end of the R2000 index at the time of purchase.

Sector Weightings are generally .5x to 2x the benchmark weights of the major economic sectors.

**Performance – William Blair Small Cap Growth**

| Period Ending 11/30/2018<br>(Annualized Percentages) | <u>YTD*</u> | <u>1-Year</u> | <u>3-Year</u> | <u>5-Year</u> | <u>7-Year</u> | <u>10-Year</u> |
|--|-------------|---------------|---------------|---------------|---------------|----------------|
| Strategy Gross Returns                               | 13.47%      | 14.14%        | 19.99%        | 12.72%        | 18.49%        | 19.91%         |
| Strategy Net Returns                                 | 12.66       | 13.25         | 19.06         | 11.84         | 17.57         | 18.98          |
| Russell 2000 Growth                                  | 2.69        | 2.81          | 9.97          | 8.22          | 13.21         | 15.55          |
| Excess Returns (Net-R2G)                             | 9.97        | 10.44         | 9.09          | 3.62          | 4.36          | 3.43           |

| Calendar Years*           | <u>YTD</u><br><u>(11/30/18)</u> | <u>2017</u> | <u>2016</u> | <u>2015</u> | <u>2014</u> | <u>2013</u> |
|---------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|
| Strategy Gross Return     | 13.47%                          | 28.6%       | 20.7%       | -2.9%       | 4.0%        | 54.7%       |
| Strategy Net Return       | 12.66                           | 27.64       | 19.73       | -3.64       | 3.22        | 53.52       |
| Russell 2000 Growth Index | 2.69                            | 22.17       | 11.32       | -1.38       | 5.6         | 43.3        |
| Excess Returns (Net-R2G)  | 9.97                            | 5.47        | 8.41        | -2.26       | -2.38       | 10.22       |

\*Not Annualized.

**Portfolio Characteristics**

Investment Style

U.S. Small Cap Growth

Benchmark

Russell 2000 Growth

|                                | <u>Portfolio</u>                                   | <u>Benchmark</u> |
|--------------------------------|--|------------------|
| Number of Holdings/Issues      | 88   | 1,239            |
| Average Annual Turnover        | 74%  | n/a              |
| Market Cap at Purchase/Current | Below the high-end of the<br>R2000 / \$3.1 billion | n/a              |
| Sharpe Ratio                   | 0.89   | 0.50             |
| P/B Ratio                      | 4.16   | 4.14             |
| P/E Ratio                      | 21.54  | 21.96            |

**Investment Management Fees**

Proposed Fee(s)

Separate Account: 0.79% on a \$111.0 million mandate (10% discount to standard tiered fee schedule). For example, the management fee on \$111m = \$876,900.00 / year

# Memorandum

**To:** Alameda County Employees' Retirement Association  
**From:** Verus  
**Date:** January 9, 2019  
**RE:** U.S. Equity Small Cap Growth Manager Search – Finalist Recommendation

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## **Executive Summary**

*Verus concurs with the staff's recommendation that William Blair should be the recommended candidate for the ACERA small cap growth equity allocation. While both William Blair and Virtus Kayne Anderson Rudnick (KAR) have many positive attributes, we have stronger forward conviction in William Blair after more thoroughly analyzing each manager's organizational resources, team depth, and investment process and considering the potential risks and optimal fit for ACERA. Our assessments are reflected in the scoring model. The following includes brief commentary on each manager (detailed manager evaluations are attached) and concludes with some key differentiators favoring William Blair over KAR.*

## **William Blair**

William Blair is a privately-held firm known for its growth investing across geographies. William Blair scored the highest in our manager scoring upon completion of our due diligence process. Both Verus and staff have very strong forward conviction in their small cap growth product. The organization is extremely well-resourced with significant AUM (\$62.2 billion), portfolio manager and research depth and experience, and integrated technology. Mike Balkin and Ward Sexton are the strategy co-PMs and are supported by eight dedicated small cap research analysts with meaningful experience. They have a robust investment thesis, a disciplined and well-diversified investment process with a proprietary research focus and have had consistent and strong historical performance. The process emphasizes small cap quality growth equities and the strategy is diversified with 70-90 holdings and moderate active risk (6% as measured by tracking error). The strategy has provided steady annualized net excess returns (2.4% over ten years ended 9/30/18), and there is still some remaining capacity. Product assets were \$1.2 billion as of 9/30/18.

## **Virtus Kayne Anderson Rudnick (KAR)**

Virtus is a publicly traded firm (ticker VRTS on the NASDAQ) with a suite of boutique investment managers under its umbrella whose capabilities span asset classes. Virtus has grown both

organically and through acquisition. Virtus KAR's core competencies lie in the U.S. small to mid cap equity space, with most of its assets in U.S. small cap growth. Relative to their small cap peer universe, KAR has an extremely high product AUM (> \$5 billion), very concentrated portfolio holdings (20-35), and a large active risk (8% tracking error). Their low turnover (approximately 25% annually) creates a relatively large weighted average market capitalization which allows them to manage more assets than a typical small cap manager. A potential risk is the structural overlap of their SMID capitalization holdings with existing ACERA equity mandates, but performance has been superior, and we have confidence in the investment team and process.

### **Conclusion**

*While we have strong forward conviction in KAR, we have greater confidence in William Blair for the following reasons:*

- **Capacity:** *While William Blair manages a reasonable \$1.2 billion in small cap growth, KAR manages more than \$5 billion in a concentrated portfolio. This creates potential large KAR ownership positions in individual stocks which could lead to liquidity trading issues.*
- **Style Risk:** *KAR's low annual turnover leads to significant mid cap equity exposure compared to the small cap peer universe (the weighted average market capitalization for KAR is approximately \$6.5 billion) which creates some SMID cap structural overlap with ACERA's existing equity mandates. (It is typical for large cap managers to purchase some mid cap companies that are on the lower end of their investable universes.) In contrast, William Blair's portfolio is primarily small cap as reflected by their weighted average market capitalization of approximately \$3.1 billion.*
- **Active Risk:** *While William Blair's 10-year annualized tracking error to the Russell 2000 Growth Index approximates the median peer at about 6%, KAR's tracking error is high at 8% and is similar to that of the incumbent ACERA small growth manager (Next Century).*
- **Ownership:** *While William Blair is 100% broadly owned by employees, KAR is 100% owned by Virtus Investment Partners. Verus believes that broad employee ownership better aligns the incentives of the key investment professionals with fund investors.*
- **Client Experience:** *While approximately 80% of the small growth assets managed by William Blair are for institutional clients, such as public funds, the majority of KAR's small growth assets are via a sub advisory relationship.*

*Thus, Verus concurs with the ACERA staff recommendation to recommend William Blair for the ACERA small cap growth mandate.*



# **PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS**



**January 2019**

U.S. Small Cap Growth Search

Alameda County Employees' Retirement Association

# I. Manager overview



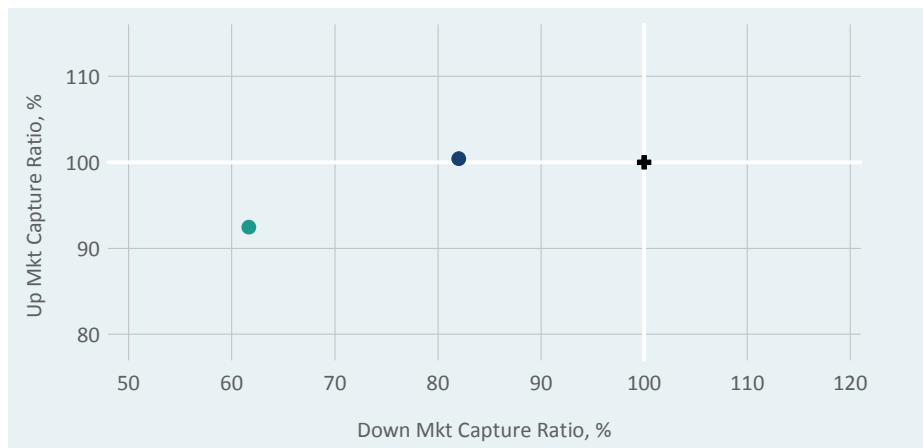
# Manager comparison

|                       | William Blair  | Kayne Anderson   |
|-----------------------|--|--|
| FIRM OWNERSHIP        | 100% employee owned  | 100% owned by Virtus Investment Partners                     |
| FIRM NAME             | William Blair Investment Management, LLC                               | Kayne Anderson Rudnick Investment Management, LLC            |
| PRODUCT NAME          | Small Cap Growth   | Small Cap Sustainable Growth, ACERA                          |
| FIRM TOTAL AUM (\$MM) | \$62,196   | \$26,830   |
| STRATEGY AUM (\$MM)   | \$1,219  | \$6,100  |
| INCEPTION DATE        | Jan-89   | Jan-98   |
| PREFERRED BENCHMARK   | Russell 2000 Growth  | Russell 2000 Growth  |
| INVESTMENT APPROACH   | Fundamental  | Fundamental  |
| SCREENING APPROACH    | Bottom-up  | Bottom-Up  |
| KEY ATTRIBUTES        | High-quality focus<br>Large team<br>Attractive upside/downside profile | Larger cap tilt<br>Higher tracking error<br>Downside profile |

# Style and portfolio comparison

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

UP/DOWN MARKET CAPTURE, DEC-08 TO NOV-18



RUSSELL 6 STYLE MAP, DEC-08 TO NOV-18

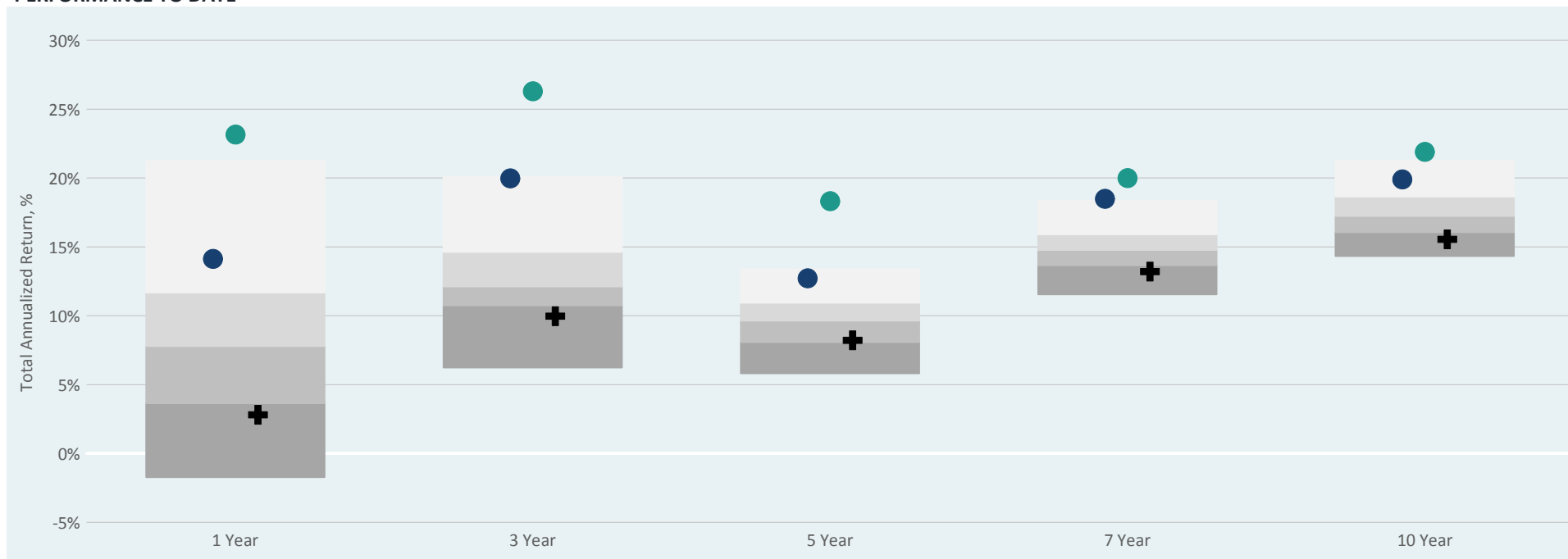


|                                 | William Blair | Kayne Anderson |
|---------------------------------|---------------|----------------|
| % HOLDINGS IN 10 LARGEST STOCKS | 16.8%         | 54.7%          |
| ANNUAL TURNOVER                 | 61.3%         | 21.0%          |
| CASH                            | 1.2%          | 2.8%           |
| CURRENT DIVIDEND YIELD          | 0.6%          | 0.7%           |
| CURRENT P/E                     | 27.2          | 38.9           |
| CURRENT P/B                     | 4.2           | 6.4            |
| 5 YEAR ROE                      | 11.0%         | 23.4%          |
| PORTFOLIO HOLDINGS              | 89            | 27             |
| WGTD. AVG. MKT. CAP             | \$ 2,900      | \$ 6,480       |
| MEDIAN MKT. CAP                 | \$ 2,461      | \$ 4,500       |
| MAX CASH POSITION               | 5.0           | 10.0           |
| MAX POSITION SIZE               | 5.0           | 10.0           |

# Performance comparison - as of November 2018

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

## PERFORMANCE TO DATE

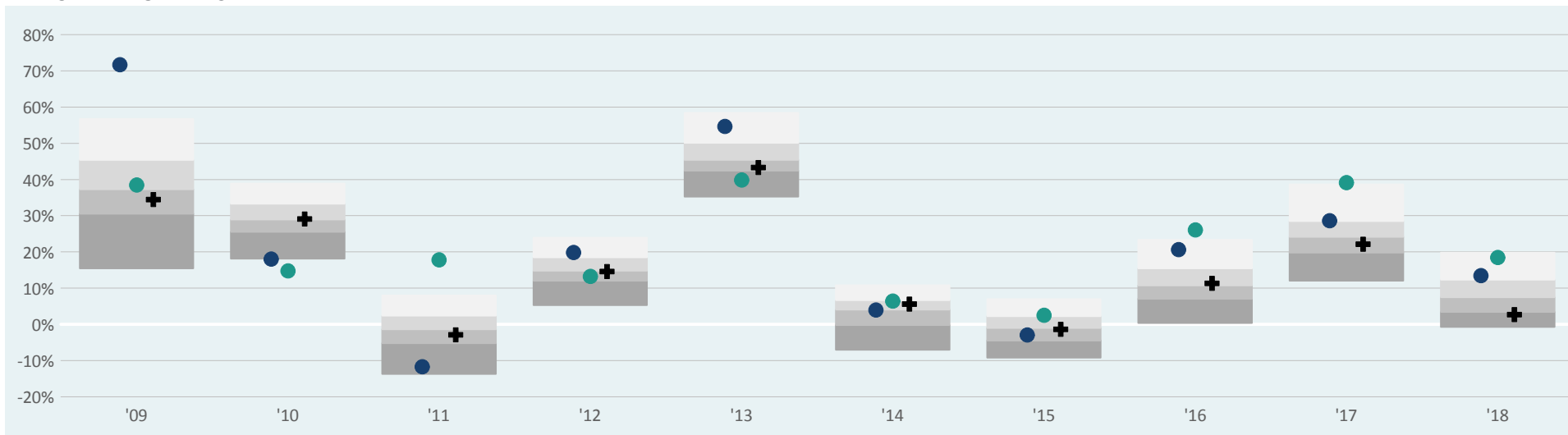


| EXCESS ANNUALIZED RETURN TO DATE, % | 1 Year | 3 Year | 5 Year | 7 Year | 10 Year |
|-------------------------------------|--------|--------|--------|--------|---------|
| William Blair                       | 11.3   | 10.0   | 4.5    | 5.3    | 4.4     |
| Kayne Anderson                      | 20.4   | 16.3   | 10.1   | 6.8    | 6.4     |

# Calendar year performance

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

## ANNUAL PERFORMANCE



| ANNUAL PERFORMANCE AND RANKING | 2009 | 2010 | 2011  | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------------------------|------|------|-------|------|------|------|------|------|------|------|
| William Blair                  | 71.8 | 18.1 | -11.7 | 19.9 | 54.7 | 4.0  | -2.9 | 20.7 | 28.6 | 13.5 |
| Rank                           | 2    | 96   | 93    | 17   | 12   | 51   | 66   | 10   | 25   | 18   |
| Kayne Anderson                 | 38.5 | 14.8 | 17.8  | 13.3 | 39.9 | 6.5  | 2.6  | 26.1 | 39.1 | 18.5 |
| Rank                           | 45   | 99   | 1     | 65   | 84   | 28   | 24   | 3    | 5    | 9    |
| Russell 2000 Growth Index      | 34.5 | 29.1 | -2.9  | 14.6 | 43.3 | 5.6  | -1.4 | 11.3 | 22.2 | 2.7  |
| Rank                           | 63   | 49   | 61    | 54   | 68   | 33   | 55   | 47   | 61   | 79   |

# Performance summary - as of November 2018

|  | William Blair | Kayne Anderson | Russell 2000 Growth Index |
|--|---------------|----------------|---------------------------|
| <b>PERFORMANCE ANALYSIS - (10 Years)</b> |               |                |                           |
| Alpha %                                  | 4.6           | 8.8            | 0.0                       |
| Beta                                     | 0.9           | 0.8            | 1.0                       |
| R-squared %                              | 88.9          | 80.9           | 100.0                     |
| Sharpe Ratio                             | 1.1           | 1.4            | 0.8                       |
| Treynor Ratio                            | 0.2           | 0.3            | 0.2                       |
| Tracking Error %                         | 6.2           | 8.0            | 0.0                       |
| Annualized Std Dev %                     | 18.3          | 15.4           | 18.2                      |
| Information Ratio                        | 0.6           | 0.7            | ---                       |
| Max Drawdown %                           | -25.2         | -15.3          | -25.4                     |
| Calmar Ratio                             | 0.8           | 1.4            | 0.6                       |
| Excess Ann. Return %                     | 4.4           | 6.4            | 0.0                       |
| <b>PERFORMANCE TO DATE</b>               |               |                |                           |
| 1 Year                                   | 14.1          | 23.2           | 2.8                       |
| 3 Year                                   | 20.0          | 26.3           | 10.0                      |
| 5 Year                                   | 12.7          | 18.3           | 8.2                       |
| 7 Year                                   | 18.5          | 20.0           | 13.2                      |
| 10 Year                                  | 19.9          | 21.9           | 15.6                      |
| Common Inception (Dec-98)                | 11.1          | 11.9           | 7.3                       |
| <b>CALENDAR YEAR RETURNS</b>             |               |                |                           |
| 2017                                     | 28.6          | 39.1           | 22.2                      |
| 2016                                     | 20.7          | 26.1           | 11.3                      |
| 2015                                     | -2.9          | 2.6            | -1.4                      |
| 2014                                     | 4.0           | 6.5            | 5.6                       |
| 2013                                     | 54.7          | 39.9           | 43.3                      |
| 2012                                     | 19.9          | 13.3           | 14.6                      |
| 2011                                     | -11.7         | 17.8           | -2.9                      |
| 2010                                     | 18.1          | 14.8           | 29.1                      |
| 2009                                     | 71.8          | 38.5           | 34.5                      |
| 2008                                     | -46.4         | -33.6          | -38.5                     |

# Investment vehicle information

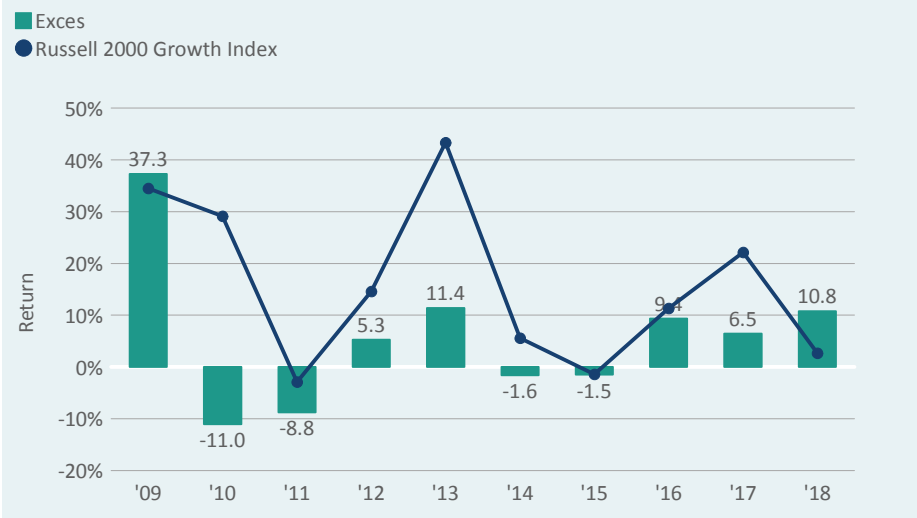
|                           | INVESTMENT<br>VEHICLES | MINIMUM<br>INVESTMENT | EXPENSE RATIO | FEE SCHEDULE        |
|---------------------------|------------------------|-----------------------|---------------|---------------------|
| <b>William<br/>Blair*</b> | Separate Account       | \$10,000,000          | 0.90%         | First \$10,000,000  |
|                           |                        |                       | 0.86%         | Next \$20,000,000   |
|                           |                        |                       | 0.81%         | Next \$20,000,000   |
|                           |                        |                       | 0.77%         | Next \$50,000,000   |
|                           |                        |                       | 0.72%         | Balance Remaining   |
| <b>Kayne<br/>Anderson</b> | Separate Account       | \$5,000,000           | 0.70%         | First \$100,000,000 |
|                           |                        |                       | 0.65%         | Balance Remaining   |

\*William Blair schedule reflects a 10% discount from standard fees.

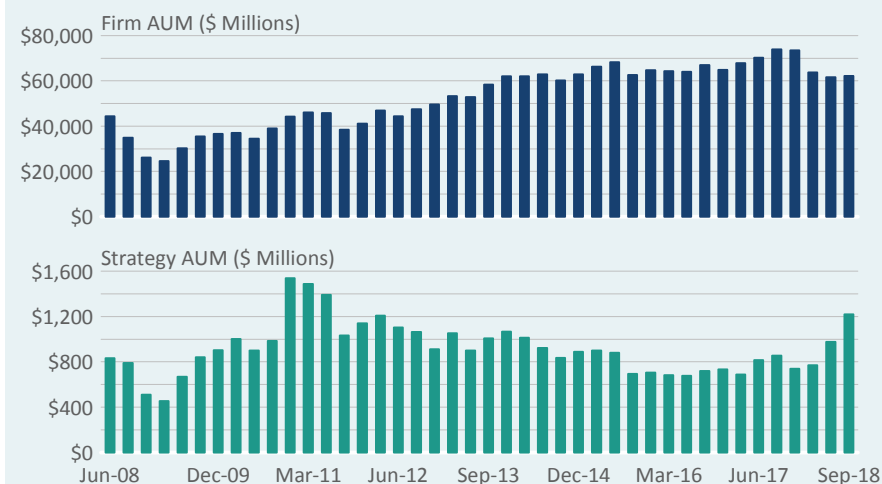
# II. Strategy detail

# Strategy overview - William Blair

## ANNUAL PERFORMANCE



## AUM GROWTH



## INVESTMENT PHILOSOPHY

- Growth philosophy is predicated on the belief that the market is inefficient with respect to distinguishing an average growth company from a quality growth company.
- William Blair views a quality growth company as one that can achieve a higher growth rate for a longer period of time than what the market expects.

## PORTFOLIO CONSTRUCTION

- Typically holds 70 to 90 securities
- Sector weights are secondary to the team's stock selection process.
- Sector weights are normally no more than 2x and no less than 0.5x the benchmark's.
- Individual position size limit of 5% (at market).

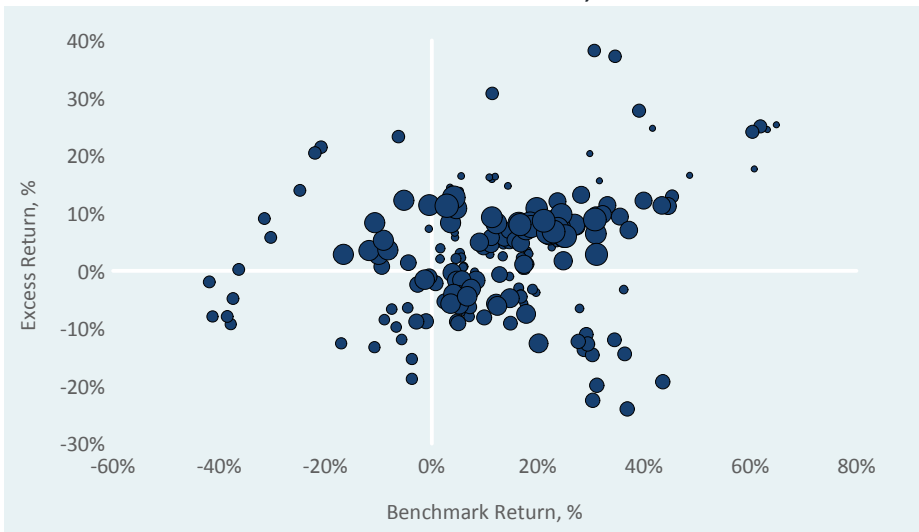
## TEAM DESCRIPTION

- Two portfolio managers.
- 15+ research analysts, most of whom are sector/industry specialists.

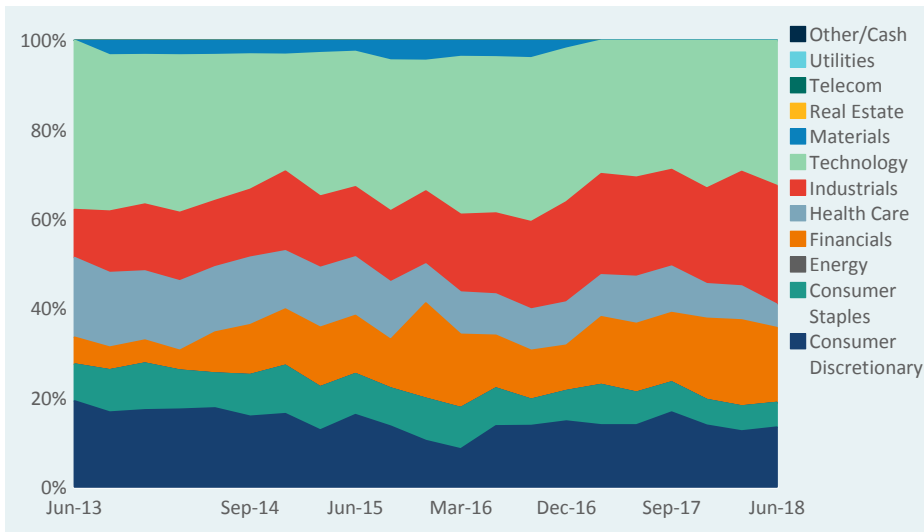


# Strategy overview - William Blair

12 MONTH EXCESS PERFORMANCE VS. BENCHMARK, DEC-03 TO NOV-18



HISTORICAL SECTOR ALLOCATIONS



## PERFORMANCE SENSITIVITY

- Over the past decade, the strategy has tended to generate more alpha in up markets while maintaining a beta < 1.

## DIFFERENTIATING CHARACTERISTICS

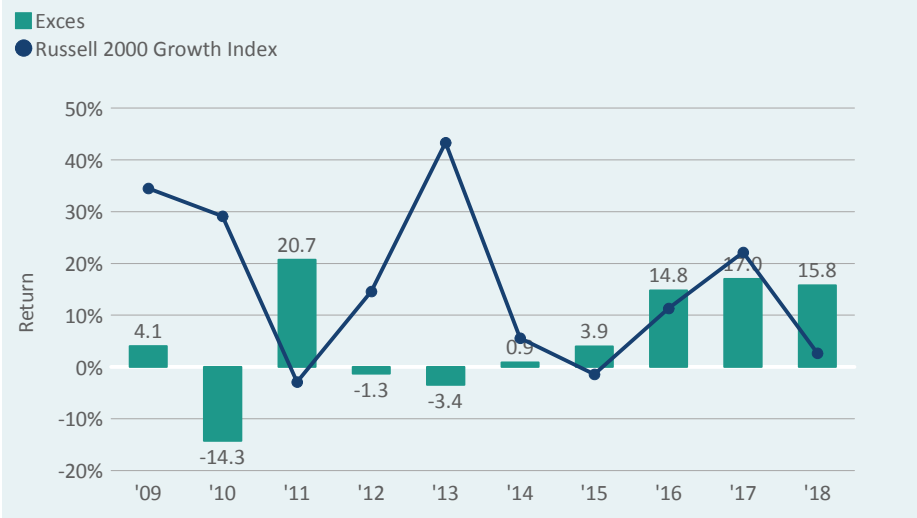
- Large investment team.
- Uses the durable business franchise framework, which is internally developed, to analyze screening results and determine if a company merits further analysis by personnel.
- Potential investments are analyzed on a fundamental and relative valuation basis.

## POTENTIAL CONCERNS

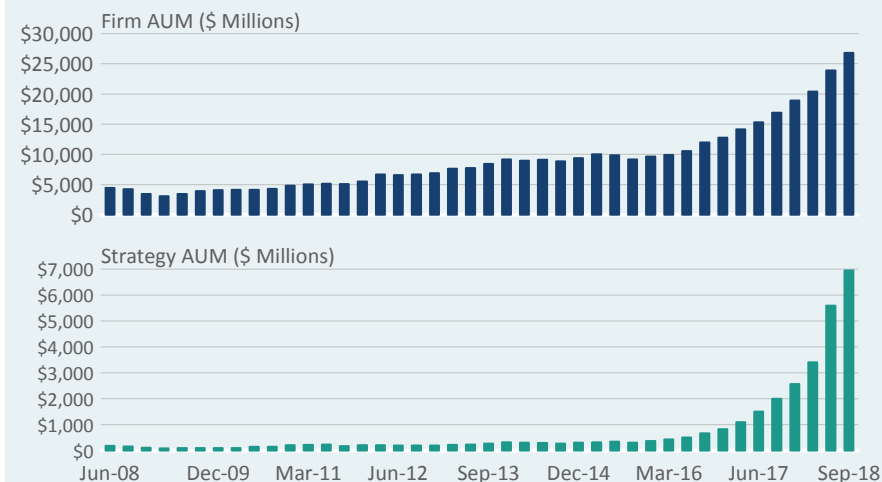
- Recent investment team turnover with the retirement of one of the strategy's three portfolio managers in 2017.
- At \$1.2 billion in AUM, the strategy is nearing full capacity.

# Strategy overview - Kayne Anderson

## ANNUAL PERFORMANCE



## AUM GROWTH



## INVESTMENT PHILOSOPHY

- Seeks to own high-quality growth companies, defined as a business characteristic that represents a company's ability to control its market, with low business risk and are characterized by consistent and profitable growth, high returns on capital, strong free cash flow and low organic need for external financing.
- The team employs a "business analyst" approach to research with the aim of developing an information advantage that fosters deep conviction in each portfolio holding.
- Belief that purchasing high-quality businesses with competitive protections at attractive valuations should achieve excess returns over a complete market cycle.

## PORTFOLIO CONSTRUCTION

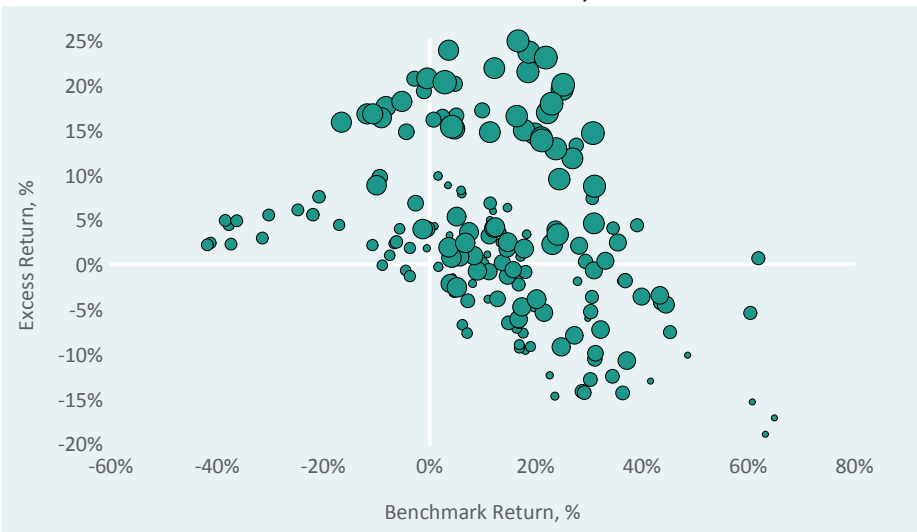
- Concentrated portfolio with 20 to 35 holdings.
- Favors larger, core-growth type companies.
- 5% maximum position size at cost (10% at market); individual position weights are typically 3% to 4%.
- Non-U.S. exposure limited to 20% (at market).

## TEAM DESCRIPTION

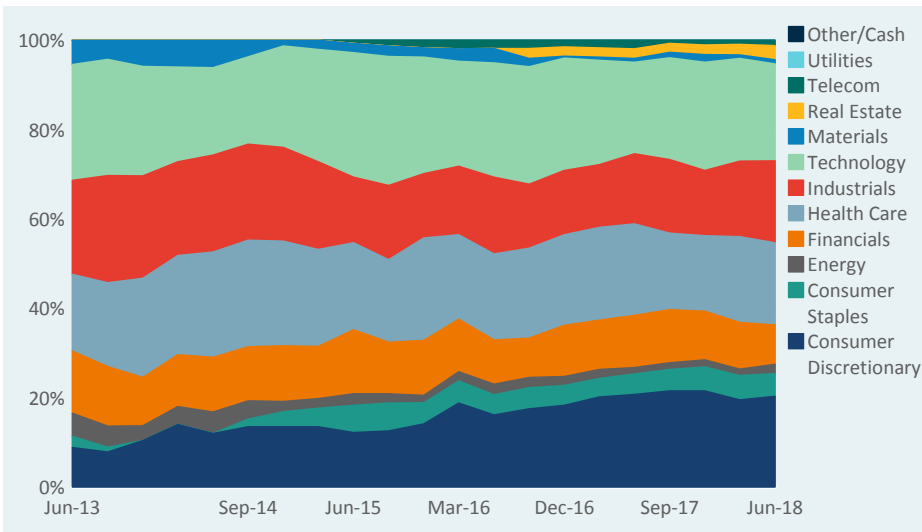
- The team is led by two portfolio managers (Jon Christensen and Todd Bailey) and supported six full-time equity research analysts.
- Equity research analysts typically focus on particular sectors/industries.

# Strategy overview - Kayne Anderson

12 MONTH EXCESS PERFORMANCE VS. BENCHMARK, DEC-03 TO NOV-18



HISTORICAL SECTOR ALLOCATIONS



## PERFORMANCE SENSITIVITY

- KAR's lower-beta approach that focus on high-quality companies with a valuation cushion should benefit the strategy in stable-to-down market environments in particular.

## DIFFERENTIATING CHARACTERISTICS

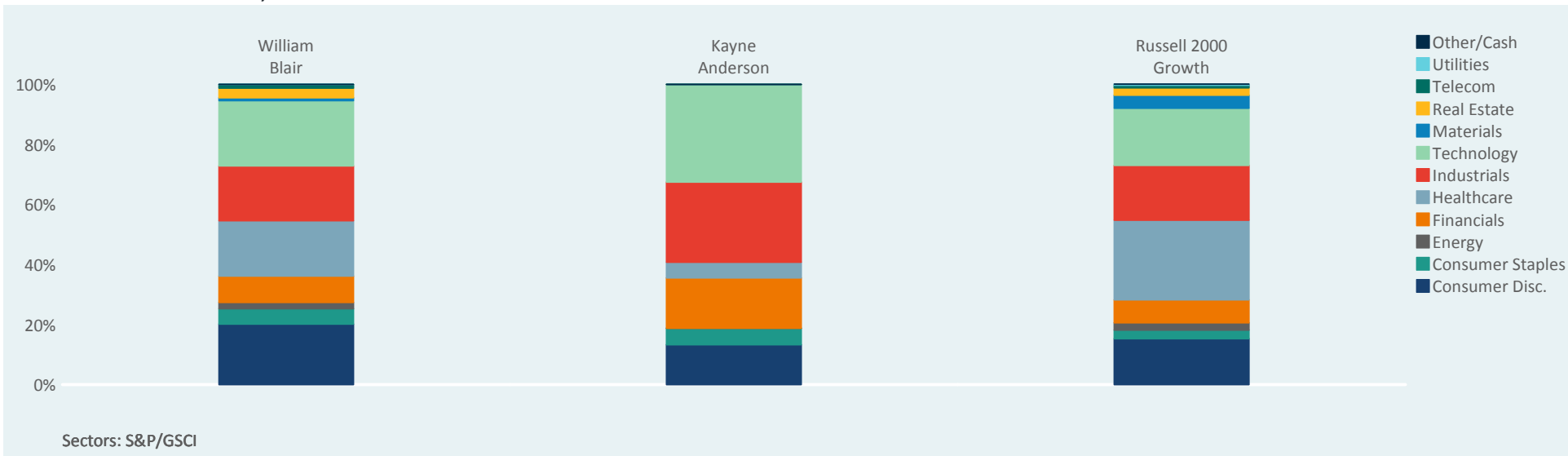
- Larger capitalization bias.
- High-concentration, low-turnover portfolio.
- Lower beta, typically < 0.8.
- Attractive downside market capture.

## POTENTIAL CONCERNS

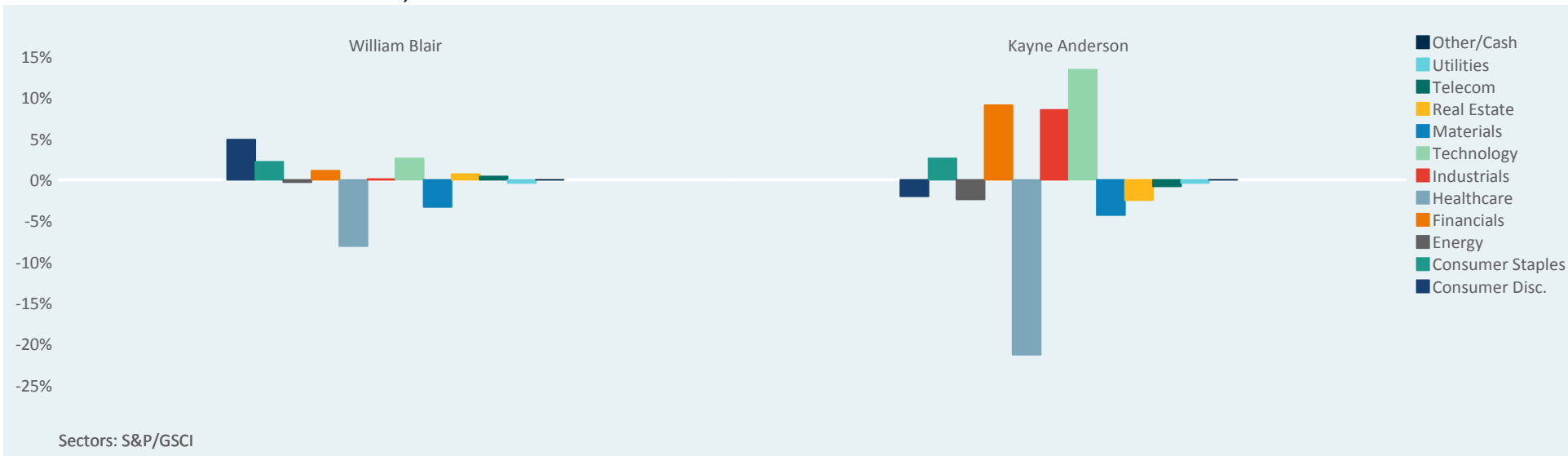
- Large product AUM (\$6.1 billion)
- Significant SMID-cap exposure creates potential structural overlap for clients with existing large-cap mandates.
- Large active risk with a 10-year annualized tracking error at 8%.
- Ownership by VirtuesInvestment Advisors, a publicly traded asset management company

# Equity sector exposure

CURRENT SECTOR POSITION, AS OF JUN-18



RELATIVE TO RUSSELL 2000 GROWTH INDEX, AS OF JUN-18



# III. Appendix

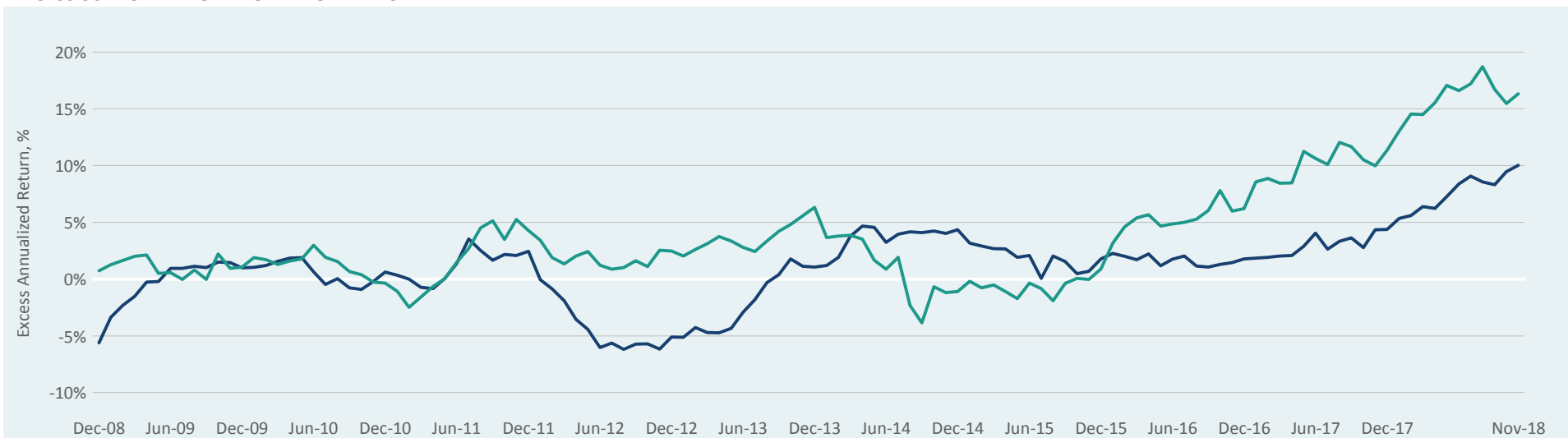
# Rolling performance

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

## TOTAL 36 MONTH ROLLING PERFORMANCE



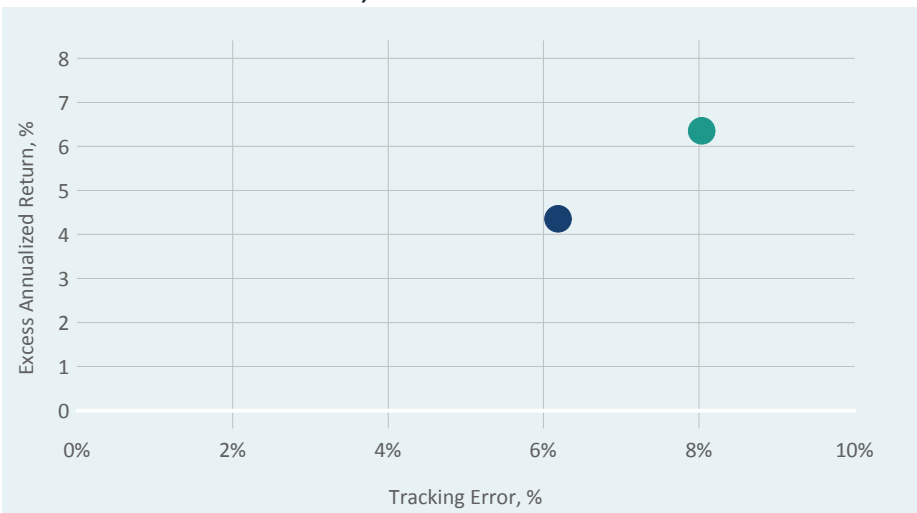
## EXCESS 36 MONTH ROLLING PERFORMANCE



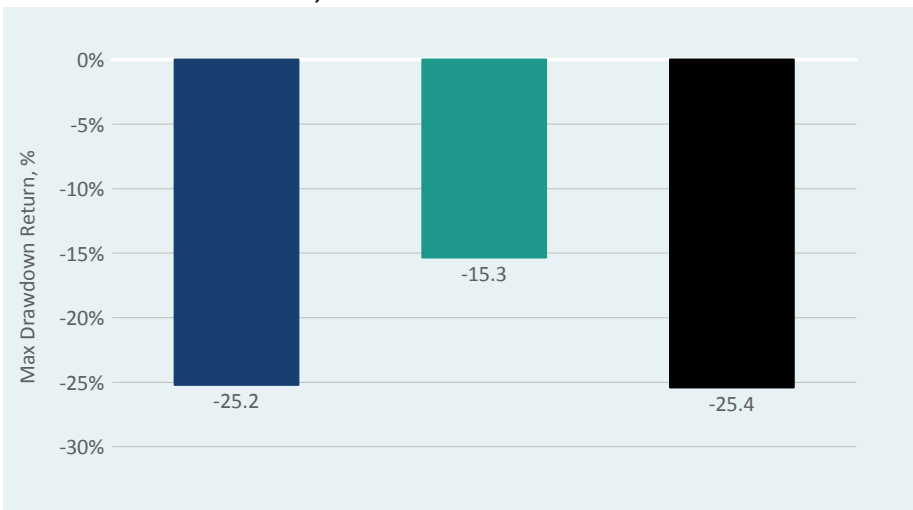
# Performance statistics

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

EXCESS PERFORMANCE VS. RISK, DEC-08 TO NOV-18



MAX DRAWDOWN RETURN, DEC-08 TO NOV-18



36 MONTH ROLLING ALPHA



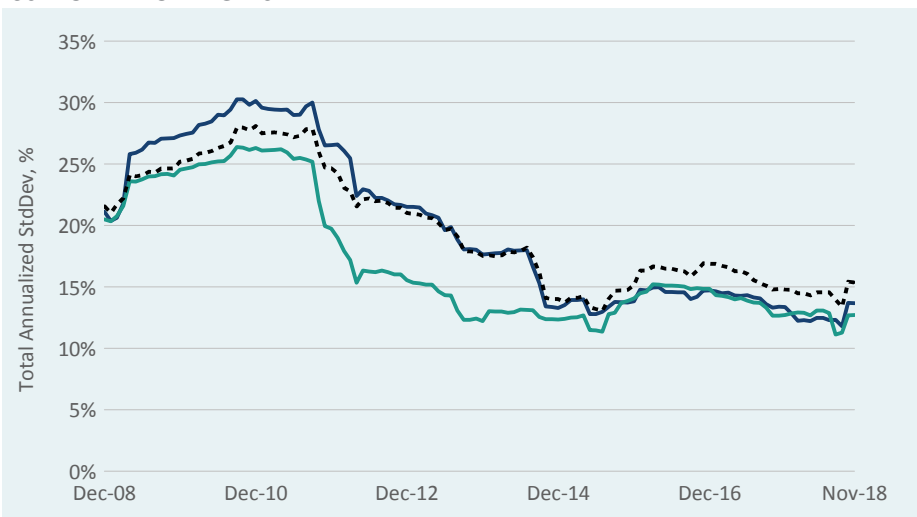
36 MONTH ROLLING BETA



# Performance statistics

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

36 MONTH ROLLING RISK



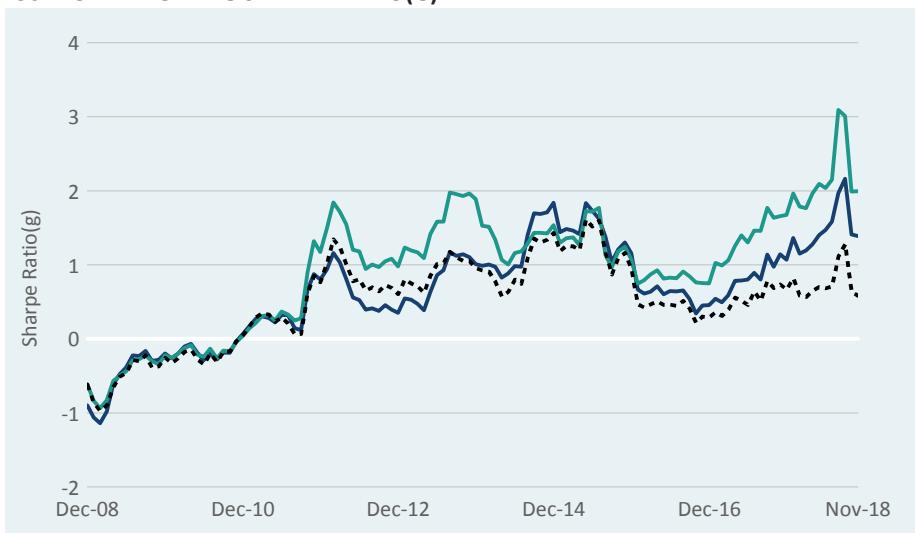
36 MONTH ROLLING INFORMATION RATIO



36 MONTH ROLLING TRACKING ERROR



36 MONTH ROLLING SHARPE RATIO(G)

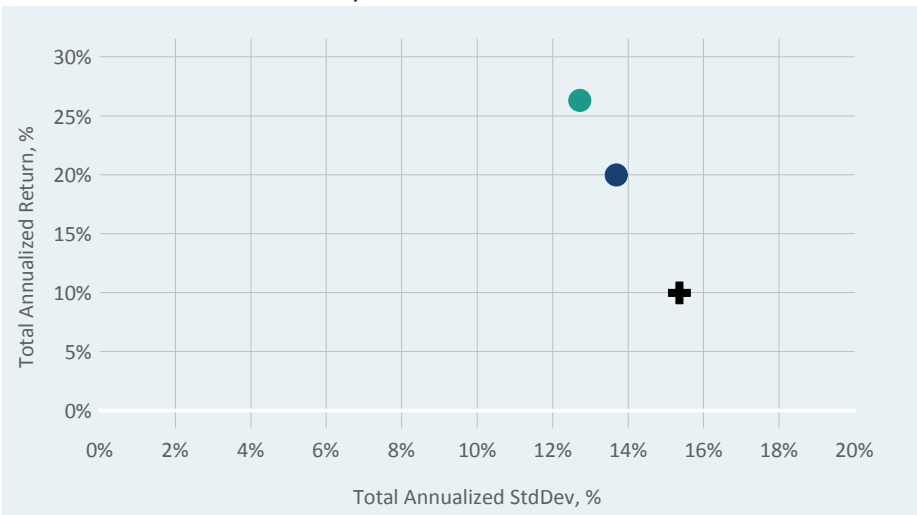




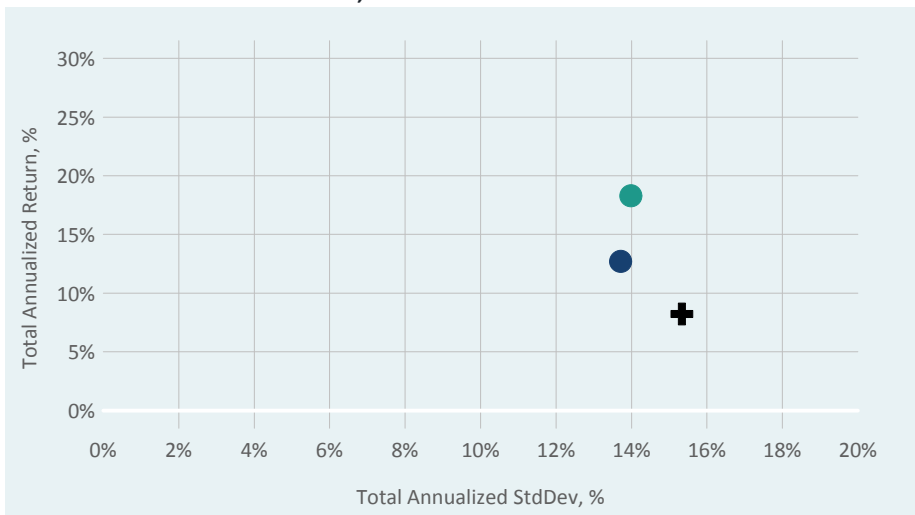
# Risk vs. return

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

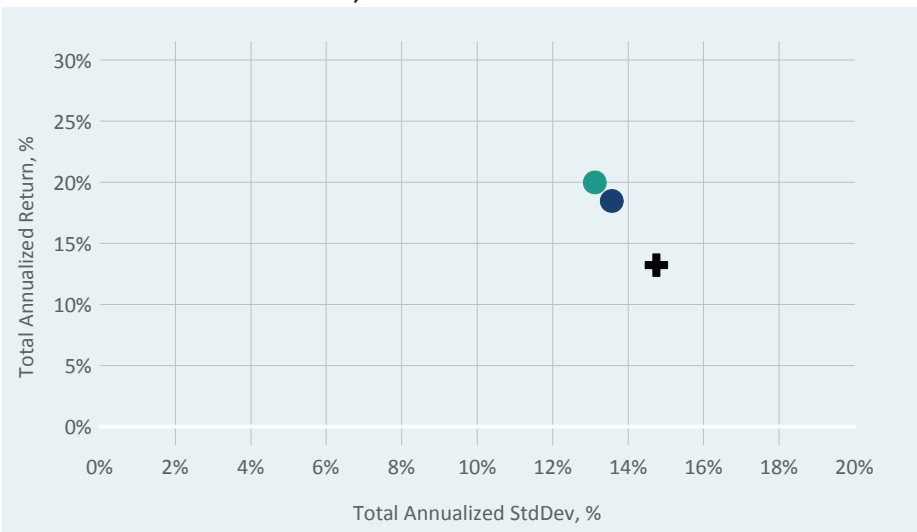
**TOTAL PERFORMANCE VS. RISK, DEC-15 TO NOV-18**



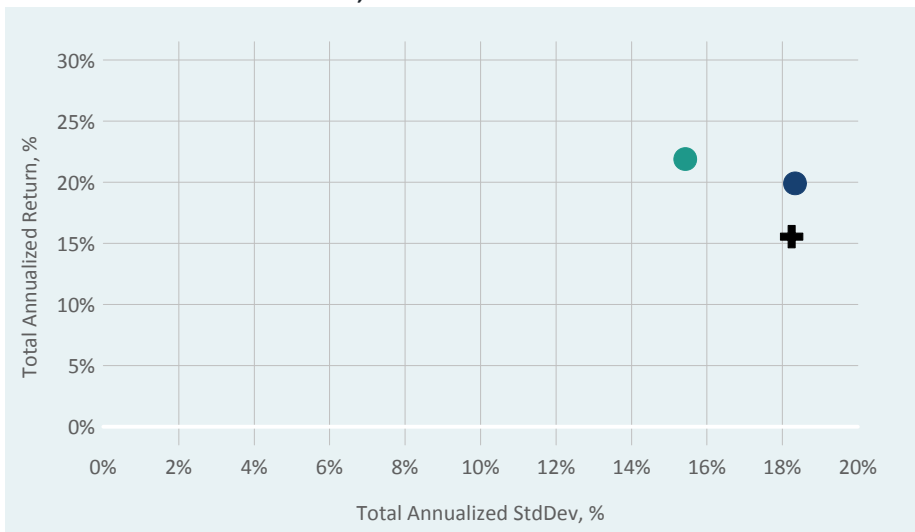
**TOTAL PERFORMANCE VS. RISK, DEC-13 TO NOV-18**



**TOTAL PERFORMANCE VS. RISK, DEC-11 TO NOV-18**



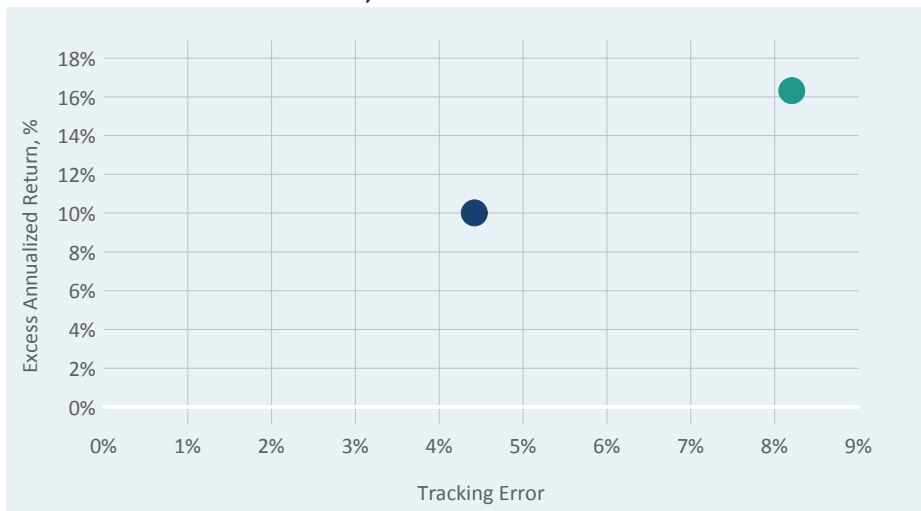
**TOTAL PERFORMANCE VS. RISK, DEC-08 TO NOV-18**



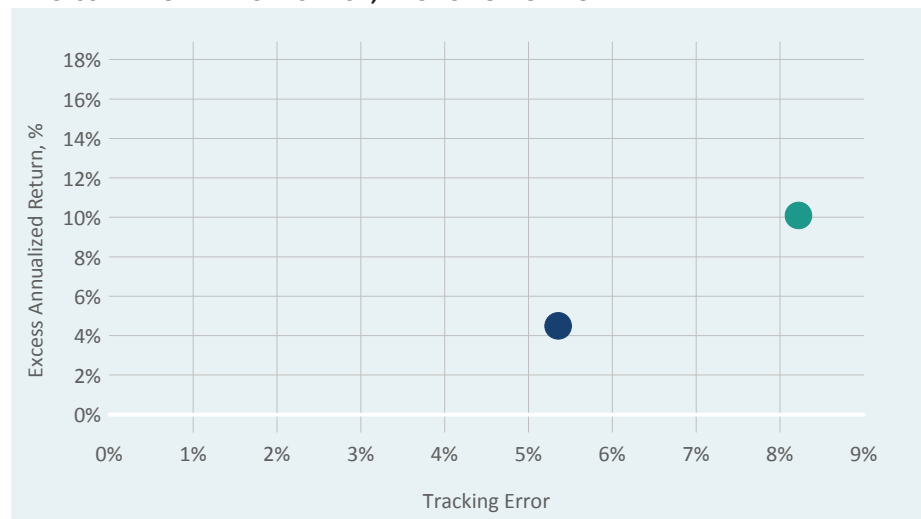
# Performance efficiency

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

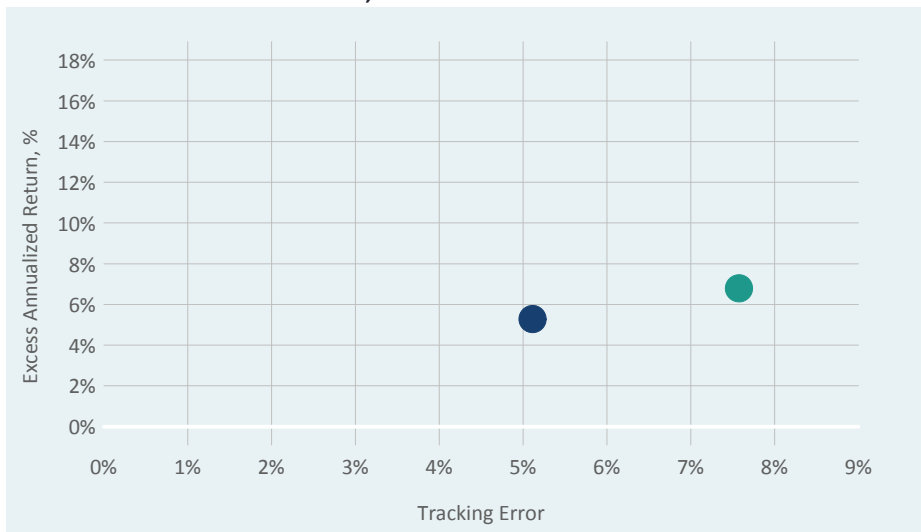
EXCESS PERFORMANCE VS. RISK, DEC-15 TO NOV-18



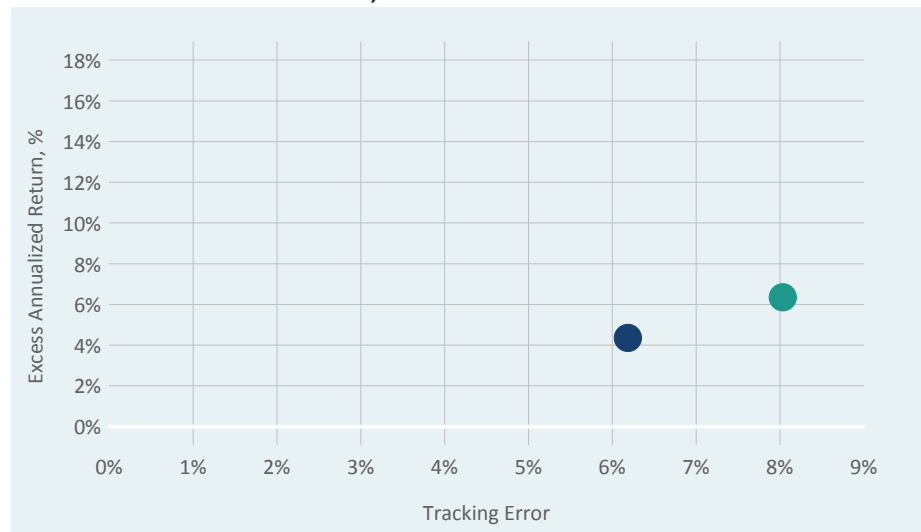
EXCESS PERFORMANCE VS. RISK, DEC-13 TO NOV-18



EXCESS PERFORMANCE VS. RISK, DEC-11 TO NOV-18



EXCESS PERFORMANCE VS. RISK, DEC-08 TO NOV-18



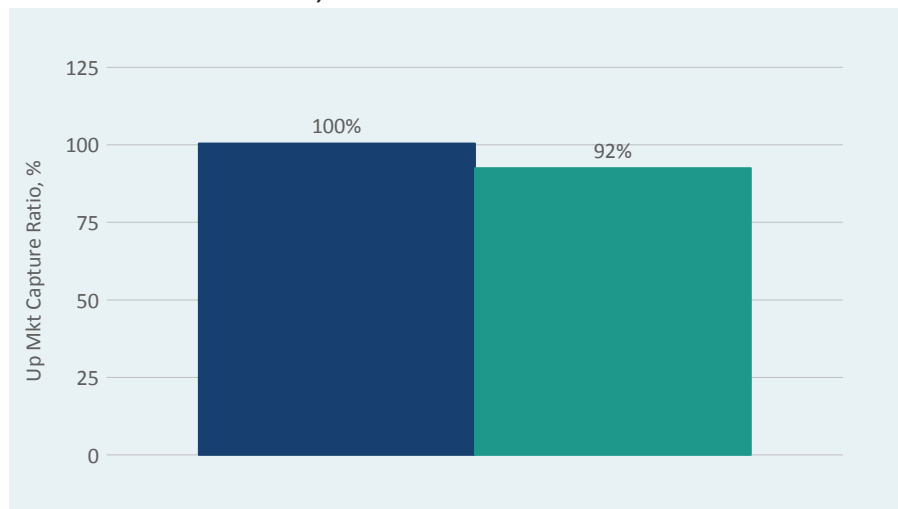
# Up & down market analysis

● William Blair ● Kayne Anderson + Russell 2000 Growth Index

36 MONTH ROLLING UP MKT CAPTURE RATIO



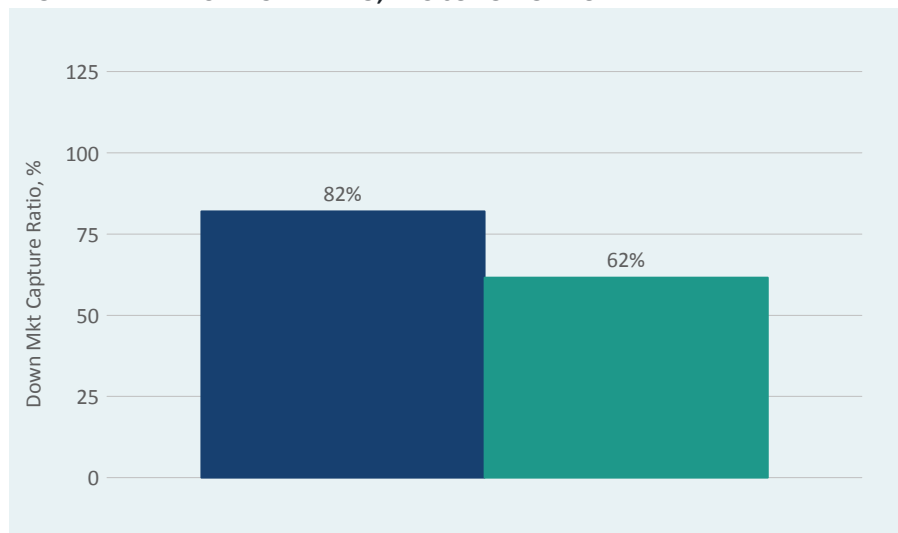
UP MARKET CAPTURE RATIO, DEC-08 TO NOV-18



36 MONTH ROLLING DOWN MKT CAPTURE RATIO



DOWN MARKET CAPTURE RATIO, DEC-08 TO NOV-18



# IV. Glossary of terms

# Glossary

**Alpha (a):** The excess return of a portfolio after adjusting for market risk, usually attributable to the selection skill of the portfolio manager.  $\text{Alpha} = \text{Excess Return} - (\text{Beta} \times \text{Excess Market Return})$ .

**Annualized Return:** Converts the Total Return to an annual basis for comparison purposes. Periods shorter than one year are not annualized.

**Benchmark:** Investment index used as a standard by which to measure the relative performance of an overall portfolio or an individual money manager. Appropriate benchmarks are selected based on their similarity to a portfolio or to the style of the individual money manager being measured.

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta (b):** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Calmar Ratio** - The Calmar Ratio is a risk/return ratio that calculates return on a downside risk adjusted basis. Similar to other efficiency ratios it balances return in the numerator per unit risk in the denominator. In this case risk is characterized by the Maximum Drawdown.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen/fallen. The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation Coefficient (r):** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Hurst Exponent:** quantifies the relative tendency of a time series either to regress the mean. A value  $H$  in the range  $0.5 < H < 1$  indicates a time series with long-term positive autocorrelation, meaning a high value in the series will probably be followed by another high value. A value in the range  $0 < H < 0.5$  indicates a time series with long-term switching between high and low values in adjacent pairs, meaning that a single high value will probably be followed by a low value. A value of  $H=0.5$  can indicate a completely uncorrelated series.

**Excess Correlation:** Correlation of the excess returns (above the benchmark).

**GARP:** Growth-At-A-Reasonable-Price. Equity strategy that combines tenets of both growth and value investing, looking for companies with above average earnings growth but excluding those with high valuations.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: alpha divided by tracking error.

# Glossary

**Kurtosis (excess returns)**- Kurtosis describes whether the series distribution is peaked or flat and how thick the tails are as compared to a normal distribution. Positive kurtosis indicates a relatively peaked distribution near the mean and tends to decline rapidly and have fat tails. Negative kurtosis indicates a relatively flat distribution near the mean.

**Long Term Reversal Factor:** Risk premium associated with buying past losers and selling past winners (five year time horizon).

**Low Volatility:** Risk premium generated by picking low volatility stocks, measured by the MSCI USA Minimum Volatility Index.

**Momentum Factor:** Risk premium associated with buying past winners and selling past losers.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Predicted Style R-squared:** Measures how well the manager's predicted style fits the manager's return series. Adding many unnecessary indices will not improve the Predicted Style R-Squared. The methodology essentially predicts the manager's style at each point in time without the data at that point with the rationale being that if the style estimates obtained so far are good, then they can be used to predict the style at the estimation point.

**Price-to-Earnings Ratio:** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**Quality:** The quality factors measured the manager's exposure to high quality stocks versus low quality stocks as defined by S&P. The factor is constructed by combining a long position in the S&P 500 High Quality index and short position S&P 500 Low Quality index.

**Regression Based Asset Loadings:** Represents the exposure period of an investment product (called a Manager, Fund, or Index in Stylus) to various explanatory variables. It is also referred to as Style Indices or Asset Classes. These Indices can be interpreted as the Manager Betas or risk factors at a given point in time.

**Risk Premium:** An expected return in excess of the risk-free rate. The premium provides compensation for the assumption of risk.

**Risk-Free Rate:** The rate of interest that one can earn on an investment with no default risk. It is generally assumed to be the interest rate on a 91 day T-Bill.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection return:** The difference between the Manager and the Manager's Style Return.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: Portfolio Excess Return / Portfolio Standard Deviation.

**Short Term Reversal Factor:** Risk premium associated with buying past losers and selling past winners (two month time horizon).

**Significance Level (Excess Returns)** - The Significance Level of a test is the probability that the test statistic will reject the null hypothesis when the hypothesis is true. Significance is a property of the distribution of a test statistic, not of any particular draw of the statistic.

# Glossary

**Size Factor:** Risk premium associated with buying small companies.

**Skewness (Excess Returns)-** Skewness describes the degree of asymmetry of a distribution around its mean. A distribution is said to be symmetric if it has the same shape to both the left and right of the mean. A perfectly symmetrical distribution has a Skewness of 0. A positively skewed distribution has larger gains than losses, while a negatively skewed distribution has a longer tail of losses.

**Standard Deviation (s):** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds.

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

**Style Returns:** The sum of the Return of each Style Asset multiplied by its weight for the time period.

**Style R-squared:** Measures how well the estimated Manager's style return series fits the manager's return series. The higher the Style R-squared, the better the fit between the manager's style and return series.

**Total Return:** Total Return geometrically compounds the Returns in the series from one period to the next.

**Tracking Error/Excess Standard Deviation:** The standard deviation of the difference between the rate of return of a portfolio and its benchmark.

**Treynor Ratio** - The Treynor Ratio is defined as the ratio of the manager's excess geometrically annualized return over the portfolio Beta. Excess returns are computed versus the cash index.

**Universe:** Also called a peer group, a universe is a large number of portfolios of a similar style. These portfolios can be divided into deciles or quartiles and then used for performance measurement and comparative purposes. Portfolios are ranked within the universe, which tells the investor how well a manager has done relative to his or her peers.

**Value:** Refers to the style of an equity manager. A value manager seeks to create returns by purchasing stocks selling at a discount to their true or intrinsic value. Typical portfolio characteristics of this strategy include a low price-to-earnings ratio, high book-to-market ratio, and high dividend yield.

**Valuation Factor:** Risk premium associated with buying companies trading at a low price/book multiple.

**VIX :** VIX is a trademark ticker symbol for the Chicago Board Options Exchange Market Volatility Index, a popular measure of the implied volatility of S&P 500 index options. Often referred to as the fear index or the fear gauge, it represents one measure of the market's expectation of stock market volatility over the next 30 day period.

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# Manager Evaluation

## Virtus Kayne Anderson Rudnick Investment Management, LLC: Small Cap Sustainable Growth

LAST UPDATED: NOVEMBER 2018

### STRATEGY BASICS (AS OF 9/30/2018)

|                           |  |
|---------------------------|--|
| Asset Class:              | Small Growth   |
| Investment Approach:      | Fundamental/Bottom-Up  |
| Preferred Benchmark:      | Russell 2000 Growth  |
| Firm Inception:           | 1984   |
| Firm Assets:              | \$26.8 billion   |
| Strategy Inception:       | 1998   |
| Strategy Assets:          | \$6.1 billion (11/30/18)   |
| Minimum Size, MF:         | \$100,000  |
| Fee, Mutual Fund (PXSGX): | 1.21%  |
| Minimum Size, CF*:        | \$10 million   |
| Fee, Commingled Fund*:    | 0.85%*   |
| Minimum Size, SA:         | \$5 million  |
| Fee, Separate Account:    | 1.00% first \$25 million<br>0.80% next \$25 million<br>0.70% remaining balance |

\*Commingled Fund Fee Information for the KAR Small-Cap Sustainable Growth Collective Investment Trust. Founders Class (Class 1) fee of 0.75% will close to new investors nine months after initial funding (September 15, 2018). Class 2 fee rate 0.85%.

### Firm Background and History

Kayne Anderson Rudnick (KAR) was founded in 1984 by two entrepreneurs, Richard Kayne and John Anderson, to manage the funds of its principals and clients. John Anderson was a prominent Los Angeles attorney and businessman, member of the Forbes 400 and named benefactor of The Anderson School of Business at The University of California, Los Angeles.

The firm, headquartered in Los Angeles, is wholly owned by Virtus Investment Partners, Inc. (NASDAQ: VRTS).

The KAR Executive Management Committee includes Douglas S. Foreman, CFA, Chief Investment Officer and

Portfolio Manager; Stephen Rigali, CFA, Executive Managing Director; and Jeannine Vanian, Chief Operating Officer.

### Strategy Background

The Virtus KAR Small Cap Sustainable Growth strategy is a fundamental, research-oriented approach that invests exclusively in “high-quality” small cap companies. Key differentiators of the firm’s investment approach are 1) An exclusive focus on “high-quality” companies (defined below); 2) a “business analyst” approach to evaluating potential investment opportunities; and 3) a focused, yet diversified, portfolio.

KAR defines “high quality” as a business characteristic that results from a company’s ability to source and develop control of its markets. Evidence of this control of markets is characterized by consistent and sustainable growth and profitability through a full economic cycle, high returns on capital, and strong free cash flow supported by an underleveraged balance sheet. The firm further evaluates a company’s management team as to its ability to develop and adhere to the business’ core competencies and to remain disciplined in their capital allocation. Moreover, KAR typically invests in companies that are out of favor and have low price momentum.

### Key Investment Professionals

The Small Growth team is led by two experienced portfolio managers: Jon Christensen (fund start date: 6/01) and Todd Bailey (fund start date: 7/02). In addition, the small growth strategy is supported by 6 full-time equity research analysts.

#### JON CHRISTENSEN, CFA, PORTFOLIO MANAGER

Jon K. Christensen, CFA, is a Portfolio Manager and a Senior Research Analyst with primary research responsibilities for the small and mid-capitalization health-

care sector. Before joining Kayne Anderson Rudnick in 2001, Mr. Christensen was a Portfolio Manager and Senior Research Analyst for Doheny Asset Management and has approximately 23 years of equity research experience. He earned a B.S. in Mathematics/Applied Science from the University of California, Los Angeles, and an M.B.A. from the California State University, Long Beach. Mr. Christensen is a Chartered Financial Analyst charter holder.

#### **TODD BEILEY, CFA, PORTFOLIO MANAGER**

Todd Bailey, CFA, is a Portfolio Manager and a Senior Research Analyst with primary research responsibilities for the small and mid-capitalization consumer discretionary and energy sectors. Before joining Kayne Anderson Rudnick in 2002, he worked as an Associate Analyst in equity research at Prudential Securities and before that was an Equity Research Associate at RNC Capital Management. He has approximately 19 years of equity research experience. Mr. Bailey earned a B.S. in Finance from Northern Arizona University and an M.B.A. from the University of Southern California. Mr. Bailey is a Chartered Financial Analyst charter holder.

### **Process**

KAR utilizes a variety of methods in their search process:

- Quantitative screens
- Ongoing research of existing holdings
- Industry research
- Company meetings and site visits
- Investment conferences
- Other investment managers' holdings
- Third-party sources

KAR's goal when searching for new investments is to identify companies with a competitive advantage within the universe of public companies that meet their market capitalization criteria. Valuation is not a key consideration at this stage. Typically, they look for quantitative financial indicators that are usually associated with the presence of a competitive advantage, including a high return on capital, a history of resilient earning power, or ample free cash flow generation. However, the presence of a competitive advantage can be masked by accounting peculiarities, unrelated business segments, unusual corporate actions, temporarily high business expenses,

industry cyclicalities, business immaturity, etc. Therefore, they also seek to identify other, non-financial statement indicators of a competitive advantage such as persistent gains in market share, pricing power, or a low operating cost position.

The primary objective of KAR's research process is to determine if a business possesses a competitive advantage and, if so, to evaluate its durability. They review regulatory filings, press releases, and industry data. They conduct comprehensive interviews with management and talk with company personnel, past and present. They may speak with competitors, customers, suppliers and visit companies' facilities. This process is intended to identify the unique attributes of a company and evaluate the strength of its competitive barriers. They believe their reputation as large, knowledgeable and long-term shareholders also aid their efforts to develop business insights.

Upon completion of KAR's business and industry research, they evaluate the market price of the company. Simply stated, they estimate the long-term investment return by approximating the long term discretionary earnings of the business and comparing that to the current price. Their acceptable return will vary according to many variables including business predictability, timing and magnitude of shareholder distributions, and their confidence level in their assumptions. They strive to think like private business buyers and seek to pay a price that will provide an attractive long-term return based on reasonable, well-informed assumptions.

KAR maintains extensive documentation of their research and write Quality Reports on each new investment which outlines their investment thesis, qualitatively describes the company's competitive advantage, details the financial character of the business, estimates the long-term return, itemizes the company's capital allocation, and outlines relevant risks. Progress Reports are also written on existing holdings quarterly and in-depth Position Reviews are undertaken upon negative events.

### **Risk Management**

The portfolio is relatively focused with approximately 20 to 35 companies. The individual holdings are diversified across economic sectors with a sector allocation discipline that allows portfolio sector weights to vary typically within

+/- 10% of the benchmark (utilizing the Russell sector classifications). There is a review by the CIO triggered if over 10%.

Individual position weights are typically 3% to 4%. The portfolio managers may allow a security to appreciate up to 10% (at market) of the portfolio before it is reduced.

Approximately 80% of the portfolio includes companies, at the time of initial purchase for the strategy, that are within the market cap range of the index on a rolling three-year basis. Market capitalization can rise as winners grow as company holdings successfully grow in their end markets. The KAR Small Cap Growth portfolio has historically had a weighted average market cap greater than that of the benchmark.

The portfolio is intended to be fully invested always and cash or cash equivalents are not used for either tactical or strategic portfolio management purposes. Typically, cash will not exceed 10% once a portfolio is fully invested. There is a review by the CIO triggered if over 10%.

## Potential Concerns

Red flags could include changes in any of the following: portfolio management team, investment philosophy, risk control parameters, and ownership structure. Additionally, we will monitor for benchmark relative tracking error that is outside of expected or historic norms.

We have the following potential KAR concerns:

- Large product AUM: Managing over \$5 billion in a concentrated small cap portfolio potentially creates large

ownership positions in individual stocks which could lead to liquidity trading issues.

- Large weighted average market capitalization: The low annual turnover (approximately 25%) leads to significant SMID cap equity exposure which creates structural overlap for clients with existing mandates.

- Large active risk: KAR's 10 year annualized tracking error to the Russell 2000 Growth Index is 8% which is high relative to their small cap peer universe.

## Performance

Over the past decade, the strategy has produced approximately 4% of net annualized excess returns with 8% tracking error (0.5 information ratio).

## Recommendation

Verus recommends the Virtus Kayne Anderson Rudnick Small Cap Sustainable Growth fund to clients seeking exposure to the small/mid cap growth asset class with the opportunity to generate strong risk adjusted excess returns.

KAR is a parent owned, well-resourced firm with a deep and experienced investment team. The investment team's "high quality" growth strategy has generated attractive long-term performance with attractive up and down market characteristics.

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# Manager Evaluation

## William Blair & Company, LLC Small Cap Growth

LAST UPDATED: NOVEMBER 2018

### STRATEGY BASICS (AS OF 9/30/2018)

|                           |  |
|---------------------------|--|
| Asset Class:              | Small Growth   |
| Investment Approach:      | Fundamental/Bottom-Up  |
| Preferred Benchmark:      | Russell 2000 Growth  |
| Firm Inception:           | 1935   |
| Firm Assets:              | \$62.2 billion   |
| Strategy Inception:       | 1989   |
| Strategy Assets:          | \$1.2 billion  |
| Minimum Size, MF:         | \$500,000  |
| Fee, Mutual Fund (WBSIX): | 1.25%  |
| Minimum Size, CF*:        | \$5 million  |
| Fee, Commingled Fund*:    | 0.95%*   |
| Minimum Size, SA:         | \$10 million   |
| Fee, Separate Account**:  | 1.00% first \$10 million<br>0.95% next \$20 million<br>0.90% next \$20 million<br>0.85% next \$50 million<br>0.80% remaining balance |

\*The Collective Investment Trust (CIT) is available to ERISA plans (excluding those providing retiree welfare benefits) and government plans (including those providing retiree welfare benefits). In addition to the management fee, investors in the CIT are responsible for customary expenses associated with pooled investment vehicles (including custody, trustee, fund accounting, audit, etc.), which are paid to unaffiliated third party service providers. These expenses are contractually capped at 0.10%, but may be lower based on the asset level of the CIT.

\*\*10% discount offered to ACERA not included

### Firm Background and History

William Blair & Company is a privately held firm providing investment banking, asset management, equity research, brokerage, and private capital services. The firm is based in Chicago, IL.

The firm was founded in 1935, by William McCormick Blair and now employs over 1,300 people across 18 different offices and four continents. Ownership is shared among over 190 limited partners.

### Strategy Background

William Blair's quality growth philosophy is based on the belief that the market is inefficient with respect to distinguishing between an average growth company and a quality growth company. In their view, a quality growth company is one that can achieve a higher growth rate for a longer period of time than the market expects. Characteristics of the business franchises for these companies commonly include experienced and motivated management teams, unique business models (e.g., market leadership, distinctive products/services, unique market opportunities), and attractive financial profiles.

The portfolio construction process incorporates fundamental, bottom-up research. Position sizes are based on the team's conviction in the ability of a stock to meet or exceed expectations, risk-adjusted upside potential, basic liquidity parameters and overall diversification issues. The portfolio will typically hold between 70-90 securities.

### Key Investment Professionals

The Small Growth team is led by two portfolio managers after the third, Karl Brewer, retired from his portfolio management role in mid-2017. In addition, the firm's domestic equity strategies are supported by 15+ full-time analysts, eight research associates and three quantitative analysts. Half of this support group is dedicated to small cap equity research.

#### MICHAEL BALKIN, PARTNER

Michael Balkin is a portfolio manager on William Blair's Small Cap Growth strategy. He rejoined William Blair in 2008 after three years as a portfolio manager and chief investment officer of Magnetar Investment Management.

He originally joined William Blair in 1990, covering small-cap growth companies for the firm's sell-side institutional research sales group, and became a portfolio manager on William Blair's Small Cap Growth strategy in 1999. Michael received a B.A. from Northwestern University.

#### **WARD SEXTON, CFA, PARTNER**

Ward Sexton is a portfolio manager on William Blair's Small Cap Growth strategy. Previously, he was an associate portfolio manager on William Blair's Small Cap Growth strategy and a research analyst. He joined the team in 2001 and covered resource, financial, and consumer companies during his time as an analyst. He joined William Blair in 1999, initially working in the firm's corporate finance group for two years. Ward is a member of the CFA Institute and the CFA Society of Chicago. He received a B.S. in finance, with honors, from the University of Illinois Urbana-Champaign and an M.B.A., with high honors, from the University of Chicago's Booth School of Business.

### **Process**

William Blair's total small cap universe is approximately 2,000+ stocks, primarily comprised of all U.S. stocks traded within their market capitalization parameters and the primary purchase range falls below the high end of the Russell 2000 Index. New research candidates are identified by portfolio managers or research analysts, and arise through a variety of primary sources. Management teams and other corporate contacts, industry consultants, research conferences, suppliers and vendors of current companies owned, and select Wall Street analysts are all sources for new investment ideas. In addition, ideas may come from strategic discussions among each of the global sector teams or through quantitative screens for companies with attractive quality and growth characteristics.

Once a new idea is identified, a research analyst or portfolio manager will conduct brief due diligence to determine whether the company has the potential to meet their quality growth criteria. The durable business franchise framework is used to make this determination based on the strength of management, the sustainability of the business model and the attractiveness of a company's financials. The durable business franchise framework consists of an internally developed list of elements used to analyze these three areas. This analytical

framework permeates the investment philosophy and decision-making.

If a research analyst or portfolio manager concludes that a company meets their quality growth criteria, he or she will complete an initial report which is distributed and archived electronically in the department's research dashboard interface, and the stock is added to the department's research reference list. Target candidates will undergo further due diligence, commonly including company visits, deep discussions with management, and/or fundamental checks independent of company contacts. The analyst will then complete his or her analysis of the company through financial metrics and qualitative judgments, particularly as they relate to the durable business franchise.

Investment candidates considered for initial purchase in the portfolio must be agreed upon by the portfolio managers. A portfolio manager and research analyst often work together in an iterative process to more thoroughly research ideas and identify those with attractive risk-adjusted upside potential.

A key element that is reviewed by the portfolio management team at this stage is the relative attractiveness of the stock from a valuation and market psychology perspective. While they are not hesitant to pay a slight premium for a quality stock that offers sustainable growth, they are sensitive to valuation in order to ensure a stock offers good appreciation potential relative to its current price and fundamental prospects. Likewise, this valuation sensitivity leads them to a certain number of stocks that currently may be out of favor from a market psychology perspective, but have the management team, competitive position and/or business model to produce solid earnings growth going forward despite the market's near-term perception.

### **Risk Management**

The Small Cap Growth Equity strategy team manages risk in a variety of manners:

- Securities are put into one of three buckets: traditional quality growth, fallen quality growth, and undiscovered quality growth. The buckets have maximum and minimum position limits

which cap the risk factors prevalent within these buckets to the total portfolio;

- Securities are strictly sold once a price target is reached, a better opportunity arises, or fundamentals change;

Additionally, the team also closely monitors numerous risk factors as outlined in the buy recommendation documentation.

Sector weights are secondary to the team's stock selection process, but are limited to a range of 0.5x to 2.0x the relevant benchmark weights. An individual holding can be no more than 5% of the portfolio market value. Initial positions are typically within 0.5% to 1.25%. Cash is limited to 5% of the portfolio and is not used for strategic or market timing purposes.

William Blair believes that the focus on durable business franchise and emphasis on valuation help protect assets in down market periods. The investment team does not target a specific tracking error or beta, but both are monitored regularly to be aware if inadvertent skews in the portfolio.

## Potential Concerns

Red flags could include changes in any of the following: portfolio management team, investment philosophy, risk control parameters, and ownership structure. Additionally, we will monitor for benchmark relative tracking error that is outside of expected or historic norms.

Recent turnover of the portfolio management team warrants consideration and disclosure. A Portfolio manager, Karl Brewer, decided to retire from William Blair and the industry, effective December 1, 2017. While we

prefer not to see investment team turnover, it is worth noting that his replacement Mr. Sexton (fund start date: 8/1/16) has been involved with the strategy since 2001. Given that Mr. Balkin remains on the strategy (fund start date: 6/30/08), we are comfortable with the recent turnover.

Also, the strategy is nearing capacity, which is estimated to be \$1.5 - \$2 billion. Should William Blair continue to accept new client assets beyond this asset level, we would review the strategy to ensure that there isn't market cap creep or other changes to the approach.

## Performance

Over the past decade, the strategy has produced approximately 2.4% of net annualized excess returns with 6.2% tracking error (0.4 information ratio).

## Recommendation

Verus recommends the William Blair Small Growth fund to clients seeking exposure to the small growth asset class with the opportunity to generate additional alpha.

William Blair is a privately owned, well-resourced firm with a deep and experienced investment team. The investment team's quality growth strategy has generated attractive long-term performance with attractive up and down market characteristics.

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Kayne Anderson Rudnick  
Investment Management

Presented to Alameda County Employees' Retirement Association  
Small Cap Sustainable Growth Portfolio  
Third Quarter 2018

**Douglas S. Foreman, CFA**  
*Chief Investment Officer*

**Todd Bailey, CFA**  
*Portfolio Manager and Senior Research Analyst*

January 9, 2019

[kayne.com](http://kayne.com)

1800 Avenue of the Stars, 2nd Floor Los Angeles, CA 90067 T 800.231.7414



# Firm Overview

As of September 30, 2018



Kayne Anderson Rudnick  
Investment Management

## Profile

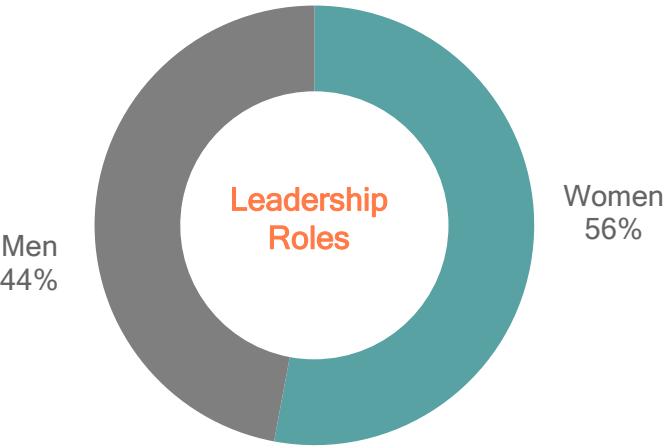
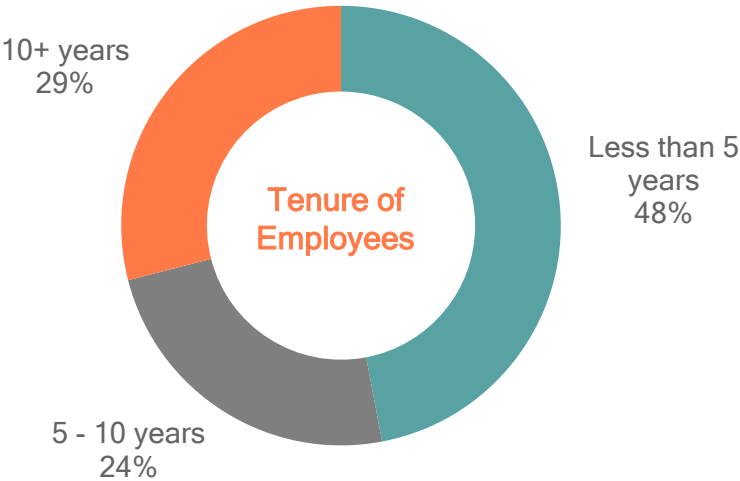
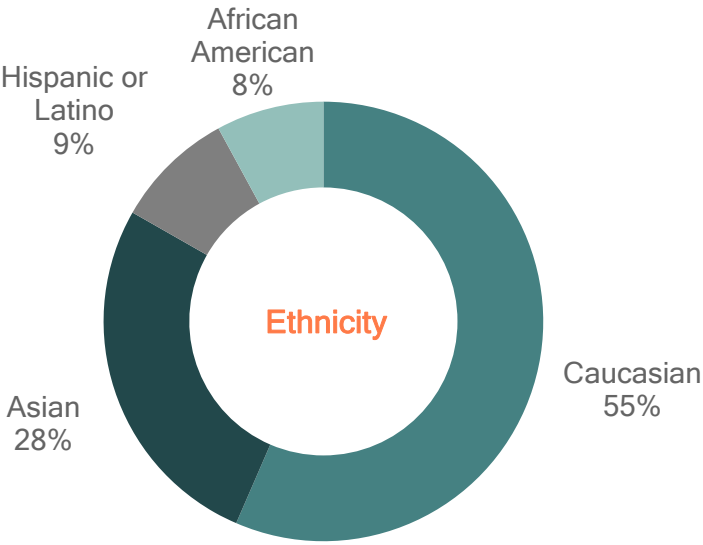
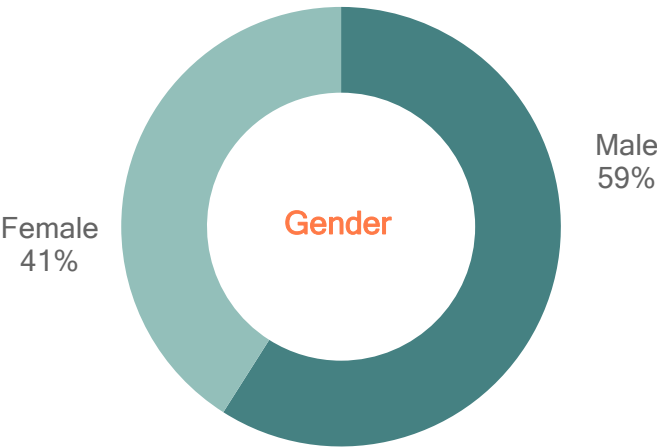
- Originally established to manage founder capital
- Over three decades of experience
- A differentiated “business analyst” investment approach focusing on high-quality businesses
- A disciplined and repeatable investment process that produces high-conviction portfolios
- A wholly owned, independent subsidiary of Virtus Investment Partners

## At a Glance

|   |                 |
|---|-----------------|
| Year Founded                              | 1984            |
| Headquarters                              | Los Angeles, CA |
| AUM                                       | \$26.8 billion  |
| Number of Equity Investment Professionals | 16              |
| Average Investment Experience             | 14 Years        |



# Employee Stats



Numbers may not always add up due to rounding.

# Small Sustainable Growth Team



Kayne Anderson Rudnick  
Investment Management

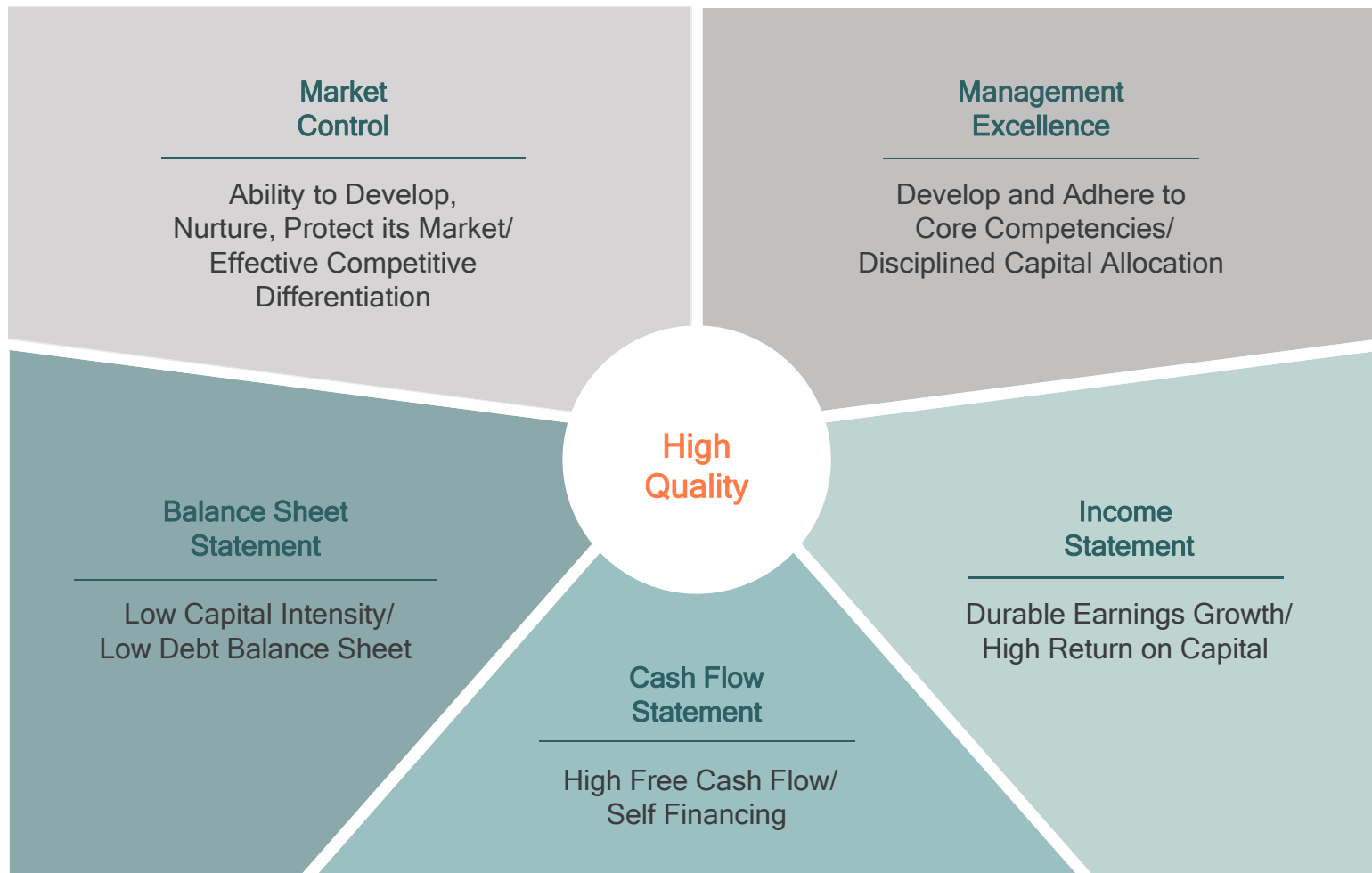
| Portfolio Manager/Analysts    | Responsibility  | Research Experience | Years with KAR |
|-------------------------------|---|---------------------|----------------|
| Douglas S. Foreman, CFA       | Chief Investment Officer  | 32 Years            | 7 Years        |
| Todd Bailey, CFA              | Portfolio Manager & Senior Research Analyst<br>Sector Coverage: Energy and Consumer Discretionary | 19 Years            | 16 Years       |
| Jon Christensen, CFA          | Portfolio Manager & Senior Research Analyst<br>Sector Coverage: Health Care                       | 23 Years            | 17 Years       |
| Julie Biel, CFA               | Senior Research Analyst<br>Sector Coverage: Technology  | 10 Years            | 5 Years        |
| Julie Kutasov                 | Senior Research Analyst<br>Sector Coverage: Materials and Processing                              | 17 Years            | 17 Years       |
| Craig Stone                   | Senior Research Analyst<br>Sector Coverage: Producer Durables                                     | 29 Years            | 18 Years       |
| Chris Wright, CFA             | Senior Research Analyst<br>Sector Coverage: Financials  | 6 Years             | 6 Years        |
| Sean Dixon                    | Research Analyst<br>Sector Coverage: Consumer Discretionary and Producer Durables                 | 9 Years             | <1 Year        |
| Adam Xiao , CFA               | Research Analyst<br>Sector Coverage: Consumer Staples, Financials and Producer Durables           | 3 Years             | <1 Year        |
| Institutional Client Services | Responsibility  | Industry Experience | Years with KAR |
| Daniela Bailly                | Managing Director – Consultant Relations  | 23 Years            | 16 Years       |
| Stephanie Gillman             | Managing Director – Institutional Client Services   | 25 Years            | 19 Years       |
| Maritza Gonzalez              | Assistant Director - Institutional Client Services  | 17 Years            | 14 Years       |

### Investment Philosophy

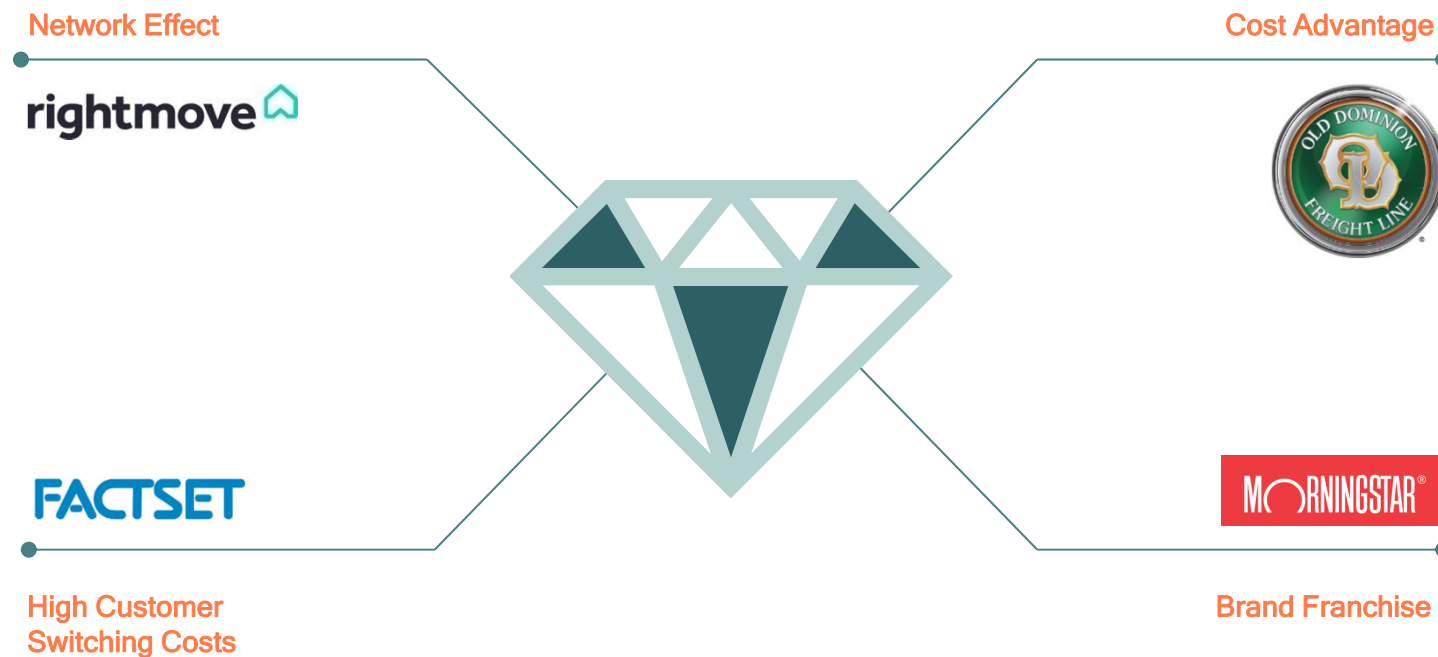
We believe that purchasing high-quality businesses with competitive protections at attractive valuations will achieve excess returns over a complete market cycle

### Investment Objectives

- To achieve a return meaningfully above that of the Russell 2000® Growth Index
- To achieve this return objective with a portfolio that exhibits lower overall risk characteristics



## Examples of High-Quality Business Models



*The securities presented on this page are chosen based upon objective criteria. Companies are chosen to exemplify diversification. We typically select companies that operate in large, vast industries, but have overwhelming market share for their particular niches. All information is provided for informational purposes only and should not be deemed as a recommendation to purchase the securities mentioned. It should not be assumed that securities recommended in the future will be profitable. A complete list of portfolio holdings and specific security transactions for the preceding 12 months is available upon request. Holdings are subject to change. Individual investors' holdings may differ slightly.*

# Investment Process Overview

## A Business Analyst Approach

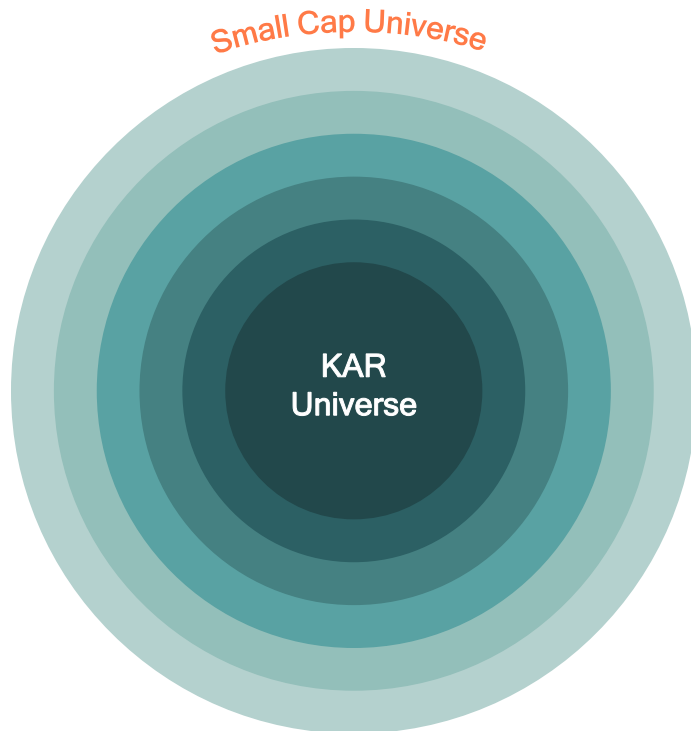
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Kayne Anderson Rudnick  
Investment Management



We source our investment universe in a number of ways



## Quantitative Screens

- High return on capital over a full economic cycle
- Long and resilient earnings history
- High return on net operating assets
- Minimal debt

## Other Resources

- Research on existing portfolio holdings
- Meetings with companies
- Industry reviews
- Investment conferences
- Third-party research

## 2 | Investment Process

### Intensive Fundamental Research



Kayne Anderson Rudnick  
Investment Management



Research analysts and portfolio managers work together to develop in-depth business knowledge



#### Qualitative Analysis

**Purpose:** Determine if competitive advantage exists and evaluate its strength.

- Review regulatory filings, company materials, industry data, and third party research
- Conduct comprehensive interviews with management; contact other relevant parties
- Understand basis of competition within industry
- Assess competitive threats and obsolescence risk: What protects the business?

#### Financial Analysis

**Purpose:** Evaluate source, level, and sustainability of economic profitability.

- Seek: High and resilient return on capital
- Seek: Persistent earning power
- Seek: Abundant discretionary cash flow
- Seek: Under-levered balance sheet
- Assess management's capital allocation practices; favor high insider ownership

#### Valuation Analysis

**Purpose:** Estimate total return over several year period; compare to other opportunities considering varying levels of certainty

- Consider economic earning power in relation to enterprise value
- Mispricing can be created by:  
Underfollowed company, investors' over-reaction to short-term challenges, improved competitive position not yet recognized



### 3 | Investment Process

#### Portfolio Construction



Kayne Anderson Rudnick  
Investment Management

#### Investment Guidelines

|                   |  |
|-------------------|--|
| Position Weights  | <ul style="list-style-type: none"><li>• 20-35 holdings</li><li>• Typically 3%-4%</li><li>• Maximum weight 10% (at market)</li></ul>              |
| Sector Tolerances | <ul style="list-style-type: none"><li>• Typically +/- 10%* of the Russell 2000® Growth Index, utilizing Russell sector classifications</li></ul> |
| Non-U.S. Holdings | <ul style="list-style-type: none"><li>• Not to exceed 20% (at market)</li></ul>  |
| Holding Period    | <ul style="list-style-type: none"><li>• Typically 3-to-5 years, but is often longer</li><li>• Portfolio turnover typically 25% to 35%</li></ul>  |
| Cash Levels       | <ul style="list-style-type: none"><li>• Typically will not exceed 10% once a portfolio is fully invested</li></ul>                               |

*\*A consequence of our high-quality investment philosophy is that certain sectors do not meet our financial criteria and offer fewer investable ideas. Our portfolios therefore will likely have persistently low exposure to those segments of the economy (and therefore may cause our sector weights to be outside of the 10% threshold relative to the benchmark). Companies operating in these areas produce consistently low or no profitability, are capital intensive, are heavily indebted, or have overly complex balance sheet structures. These may include large sectors such as Health Care (biotechnology) and also smaller sectors such as Materials & Processing (chemicals, metals and mining), Energy (oil and gas), Financials (real estate and banking), and Utilities where we will have little to no exposure.*

# 3 | Investment Process

## Sell Discipline



Kayne Anderson Rudnick  
Investment Management

### Sell Discipline

|                                      |  |
|--------------------------------------|--|
| Extended Valuation                   | <ul style="list-style-type: none"> <li>• Significant premium to intrinsic value</li> <li>• Expected annual return insufficient</li> </ul>  |
| Portfolio Upgrade                    | <ul style="list-style-type: none"> <li>• Better business</li> <li>• Better price</li> </ul>  |
| Diversification Requirements         | <ul style="list-style-type: none"> <li>• Rebalance within sector parameters</li> </ul>   |
| Acquisition Activity                 | <ul style="list-style-type: none"> <li>• Our holding acquired at an attractive premium</li> <li>• Our holding acquires a company diminishing its business or value</li> </ul>  |
| Negative Company or Industry Changes | <ul style="list-style-type: none"> <li>• Position review research report written for any of the following conditions:             <ul style="list-style-type: none"> <li>- Stock price declines 20% or more in a short time period absent a broad market decline</li> <li>- Validity deteriorates for one or more of the reasons for purchase</li> <li>- Credit-quality profile deteriorates</li> </ul> </li> <li>• Quality parameters reviewed by the Chief Investment Officer with the Portfolio Managers</li> </ul> |

## 4 | Investment Process

### Risk Management & Portfolio Monitoring



Kayne Anderson Rudnick  
Investment Management

#### Risk Management

|                          |  |
|--------------------------|--|
| Investment Philosophy    | <ul style="list-style-type: none"><li>• Focus on “high-quality” companies</li><li>• Company’s “business risk” is primary risk control factor</li></ul>   |
| Portfolio Level Controls | <ul style="list-style-type: none"><li>• Economic sector weights managed to typically within a maximum 10% variance to benchmark</li><li>• Individual security weights initiated at 2% to 5% of portfolio</li></ul>                                 |
| Position Reviews         | <ul style="list-style-type: none"><li>• “Position Review” report when a portfolio holding declines 20% absent a broad market decline</li><li>• Re-validate reasons for original purchase or sell position</li></ul>                                |
| Trading Guidelines       | <ul style="list-style-type: none"><li>• Guidelines provided by Portfolio Managers when entering and exiting portfolio holdings</li><li>• Limit on trading activities as a percentage of daily trading volume, typically no more than 20%</li></ul> |

#### Portfolio Monitoring

|   |  |
|---|--|
| Risk and Compliance Committee                   | <ul style="list-style-type: none"><li>• Meets quarterly to independently evaluate portfolio risk exposures with findings presented to the Chief Investment Officer</li></ul>   |
| CIO/PM Meetings                                 | <ul style="list-style-type: none"><li>• Provides a forum for the Chief Investment Officer and the Portfolio Managers to review, discuss, and explain each strategy’s portfolio positioning and its performance</li></ul> |
| Research Meetings                               | <ul style="list-style-type: none"><li>• Provides a forum to discuss and evaluate portfolio holdings and overall industry trends</li></ul>  |
| Performance Analytics and Portfolio Attribution | <ul style="list-style-type: none"><li>• Allows Portfolio Managers to quantify investment decisions and understand drivers of return and risk characteristics</li></ul>   |

# Portfolio Characteristics

Small Cap Sustainable Growth Portfolio – As of September 30, 2018



Kayne Anderson Rudnick  
Investment Management

|  | KAR Small Cap<br>Sustainable Growth | Russell 2000®<br>Growth Index |
|--|-------------------------------------|-------------------------------|
| <b>Quality</b>                                 |                                     |                               |
| Return on Equity—Past 5 Years                  | <b>23.9%</b>                        | 12.4%                         |
| Total Debt/EBITDA                              | <b>0.8 x</b>                        | 4.9 x                         |
| Earnings Variability—Past 10 Years             | <b>26.7%</b>                        | 79.0%                         |
| <b>Growth</b>                                  |                                     |                               |
| Earnings Per Share Growth—Past 10 Years        | <b>10.9%</b>                        | 8.5%                          |
| Capital Generation—{ROE x (1-Payout)}          | <b>18.6%</b>                        | 10.4%                         |
| <b>Value</b>                                   |                                     |                               |
| P/E Ratio—Trailing 12 Months                   | <b>37.7 x</b>                       | 74.1 x                        |
| Free Cash Flow Yield†                          | <b>2.4%</b>                         | 1.0%                          |
| <b>Market Characteristics</b>                  |                                     |                               |
| \$ Weighted Average Market Cap—3-Year Average  | <b>\$3.7 B</b>                      | \$2.3 B                       |
| Largest Market Cap—3-Year Average              | <b>\$10.8 B</b>                     | \$8.6 B                       |
| Annualized Standard Deviation—Since Inception* | <b>17.8%</b>                        | 22.6%                         |

\*January 1, 1998

†Free cash flow data is as of June 30, 2018. Prices are as of September 30, 2018. Excludes financials.

**This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.**

Data is obtained from FactSet Research Systems and BNY Mellon and is assumed to be reliable. Other principal consultant firms may use different algorithms to calculate selected statistics. Estimates are based on certain assumptions and historical information. Past performance is no guarantee of future results.

# Summary of Key Differentiators

## We Manage Risk and Generate Returns Differently



Kayne Anderson Rudnick  
Investment Management

| CLASSIC APPROACH |  | KAR APPROACH   |   |   |
|------------------|--|--|---|---|
| RISK             | <div><div>stock portfolio</div><div>75</div></div> <div>1% to 2% positions</div> | <div><div></div><div>6 years of negative returns since 1998</div><div>No stock can help or hurt more than 2%</div></div> | <div><div></div><div>stock portfolio</div><div>20-35</div></div> <div>3% to 10% positions in high-quality companies</div> | <div><div></div><div>Minimal business risk</div></div> <div><div></div><div>Minimal balance sheet risk</div></div> <div><div></div><div>Minimal profit risk</div></div> <div><div></div><div>3 years of negative returns since 1998</div></div> |
|                  | Average companies producing average returns on capital                           |  | <div></div>   | Exceptional companies producing exceptional returns on capital  |
|                  | Buying cheap and selling dear required for above-average portfolio returns       |  | <div></div>   | Buy at attractive price and let exceptional returns on capital drive exceptional growth and income over extended period of time   |
|                  | 6 months average holding period  |  | <div></div>   | 36 to 60 months average holding period, but often longer  |
|                  | High frictional costs due to RAPID trading                                       |  | <div></div>   | Low frictional costs due to LESS trading  |
| RETURNS          | Poor tax efficiency due to short holding periods                                 |  | <div></div>   | Inherent tax efficiency   |

- **Portfolio Data**
- **Biographies**
- **Representative Client List**
- **Disclosure**

# Sector Weights

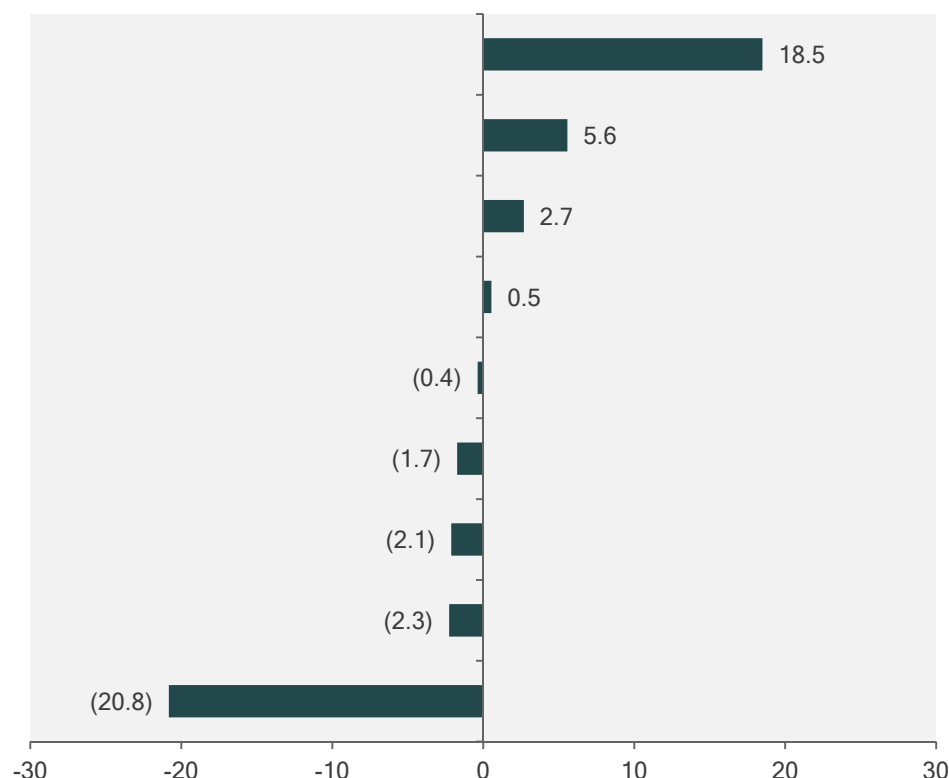
Small Cap Sustainable Growth Portfolio  
As of September 30, 2018



Kayne Anderson Rudnick  
Investment Management

| Sectors*               | KAR Small Cap Sustainable Growth (%) | Russell 2000® Growth Index (%) |
|------------------------|--------------------------------------|--------------------------------|
| Technology             | 34.4                                 | 15.9                           |
| Financial Services     | 15.7                                 | 10.1                           |
| Consumer Staples       | 5.1                                  | 2.5                            |
| Producer Durables      | 15.8                                 | 15.2                           |
| Materials & Processing | 7.3                                  | 7.6                            |
| Utilities              | —                                    | 1.7                            |
| Consumer Discretionary | 15.8                                 | 17.9                           |
| Energy                 | —                                    | 2.3                            |
| Health Care            | 6.0                                  | 26.8                           |

## Underweight/Overweight (%)



*This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.*

*\*The large underweight in the KAR portfolio relative to the Russell 2000 Growth Index in the health-care sector is due to the benchmark's large weighting in biotechnology companies and pharmaceutical companies. Within the benchmark's health-care sector, biotechnology represents 12.7% and pharmaceutical represents another 3.0% as of September 30, 2018. These two sub-sectors represent 15.7% of the health-care sector within the benchmark and is outside our investable universe given the difficulty in discerning a competitive advantage, persistent lack of profitability and not meeting our overall investment criteria. Compared to the remaining 11.1% weight in the benchmark, our portfolio has a 6.0% weight in health care. The overweight the technology sector is due to the classification of the diverse business models held within our portfolio by the Russell sector classification system that is used. Many of these businesses within the technology sector will be categorized to other non-technology sectors by other index classification systems beginning in the third quarter 2018 (i.e., GICS is adding a Communication Services sector beginning in 3Q that will reduce this overweight as many of the companies currently held will move to this new sector).*

*A complete list of portfolio holdings and specific security transactions for the preceding 12 months is available upon request. Holdings are subject to change. Holdings and weightings are based on a representative portfolio. Individual investors' holdings may differ slightly. The sector information represented above is based on Russell sector classifications. Data is obtained from FactSet Research Systems and is assumed to be reliable. Numbers may not always add up due to rounding.*

# Conviction-Driven Investing Provides Opportunities for Excess Return

## Small Cap Sustainable Growth Portfolio

As of September 30, 2018



Kayne Anderson Rudnick  
Investment Management

| Top 10 Holdings                 | Russell Sector         | % of Portfolio |
|---------------------------------|------------------------|----------------|
| Fox Factory Holding             | Consumer Discretionary | 8.7            |
| Autohome                        | Technology             | 7.0            |
| Auto Trader Group               | Technology             | 6.0            |
| HEICO                           | Producer Durables      | 5.2            |
| The Chefs' Warehouse            | Consumer Staples       | 5.2            |
| Old Dominion Freight Line       | Producer Durables      | 5.1            |
| Aspen Technology                | Technology             | 5.0            |
| Ollie's Bargain Outlet Holdings | Consumer Discretionary | 4.1            |
| Copart                          | Producer Durables      | 4.1            |
| NVE                             | Technology             | 4.0            |
| <b>Total</b>                    |                        | <b>54.5</b>    |

Research confidence leads to large active weights

|                                | KAR Small Cap<br>Sustainable Growth | Russell 2000®<br>Growth Index |
|--------------------------------|-------------------------------------|-------------------------------|
| # of Holdings                  | 27                                  | 1,253                         |
| Average Position Size (%)      | 3.7                                 | 0.1                           |
| Weight of Top Ten Holdings (%) | 54.5                                | 4.9                           |
| Active Share (%)               | 98.3                                | —                             |

The strategy benefits from diversification while still taking significant active positions

*This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.*

*A complete list of portfolio holdings and specific security transactions for the preceding 12 months is available upon request. Holdings are subject to change. Holdings and weightings are based on a representative portfolio. Individual investors' holdings may differ slightly. The sector information represented above is based on Russell sector classifications. Data is obtained from FactSet Research Systems and is assumed to be reliable. Numbers may not always add up due to rounding.*



# Strong Risk-Adjusted Returns

## Small Cap Sustainable Growth Portfolio

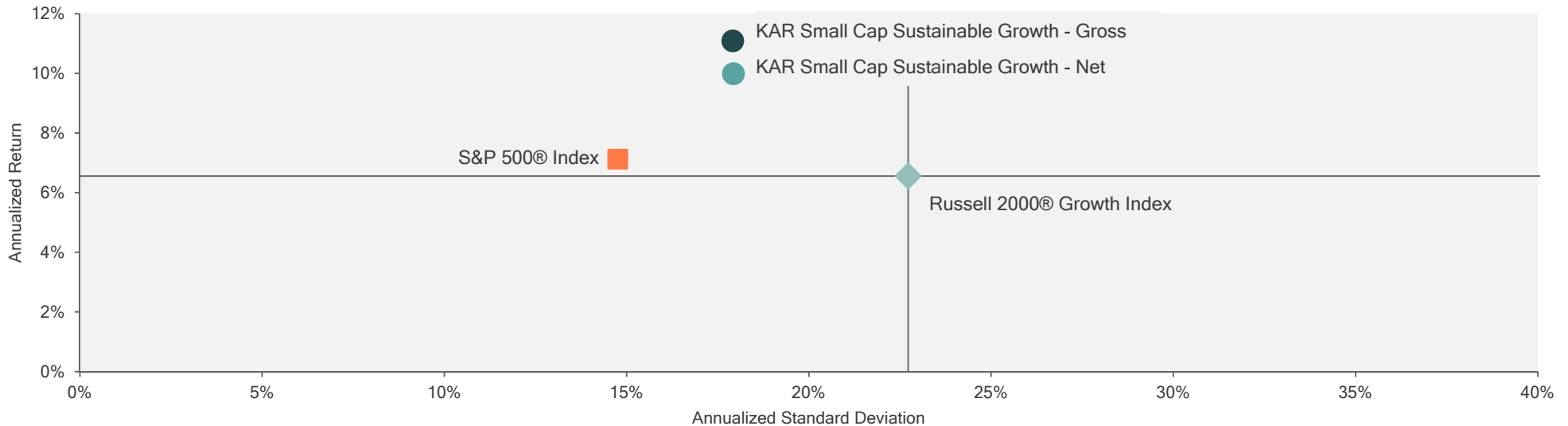
Inception\* to November 30, 2018



Kayne Anderson Rudnick  
Investment Management

### Meaningful Excess Return with Lower Volatility

Annualized Since Inception\*



### Strong Risk-Adjusted Performance Metrics

Annualized Since Inception\*

|                                  | Alpha | Sharpe Ratio | Standard Deviation | Semi-Standard Deviation | Beta | Tracking Error |
|----------------------------------|-------|--------------|--------------------|-------------------------|------|----------------|
| KAR Small Cap Sustainable Growth | 5.67  | 0.51         | 17.91              | 13.78                   | 0.67 | 12.04          |
| Russell 2000® Growth Index       | 0.00  | 0.20         | 22.72              | 17.03                   | 1.00 | 0.00           |

\*January 1, 1998

*This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.*

*Returns for the Kayne Anderson Rudnick composite are preliminary and are gross of fees unless otherwise specified. For further details on the composite, please see the disclosure statement in this presentation. Data is obtained from FactSet Research Systems and is assumed to be reliable. Past performance is no guarantee of future results.*

# 5-Year Rolling Returns

## Small Cap Sustainable Growth Portfolio

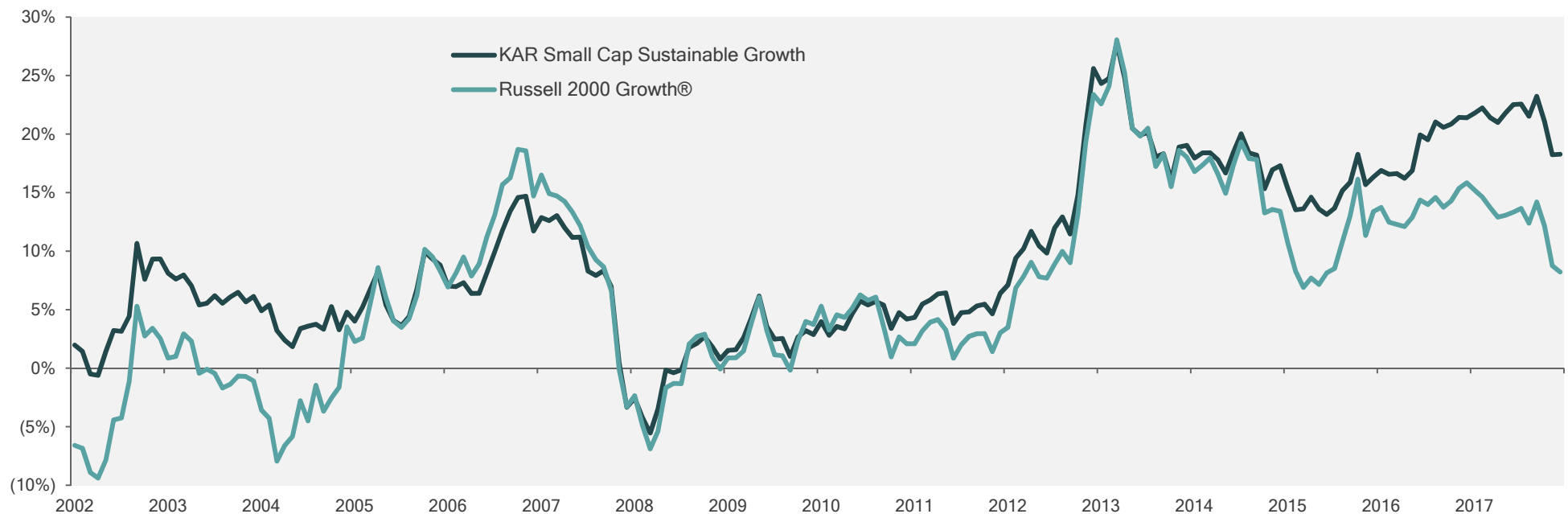
Inception\* to November 30, 2018



Kayne Anderson Rudnick  
Investment Management

### Performance Statistics

#### 5-Year Rolling Returns



\*January 1, 1998

***This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.***

*Returns for the Kayne Anderson Rudnick composite are preliminary and are gross of fees unless otherwise specified. For further details on the composite, please see the disclosure statement in this presentation. Data is obtained from FactSet Research Systems and is assumed to be reliable. Past performance is no guarantee of future results.*

# Peer Comparison

Small Cap Sustainable Growth Portfolio  
Ten Years Ending September 30, 2018



Kayne Anderson Rudnick  
Investment Management



*This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.*

*The Small Cap Growth Universe includes all managers categorized in the small cap growth asset class by eVestment.*

*Returns for the Kayne Anderson Rudnick composite are preliminary and are gross of fees unless otherwise specified. For further details on the composite, please see the disclosure statement in this presentation. Data is obtained from FactSet Research Systems and is assumed to be reliable. Past performance is no guarantee of future results. Management fees are described in Part II of our form ADV, which is available upon request. Gross annual returns will be reduced by investment management fees and other expenses that may be incurred in the management of the account. Net annual returns have been calculated after the deduction of an assumed maximum annual fee of 1%. The effect on performance would grow at a compounded rate. Over a five-year period, if a \$250,000 portfolio had an annual return of 10%, it would grow to \$402,628. The net compounded effect of a 1% annual investment management fee would total \$17,972 and result in a portfolio value of \$384,656.*

# Returns

## Small Cap Sustainable Growth Portfolio



Kayne Anderson Rudnick  
Investment Management

### Annualized Performance

| Periods Ending 11/30/18 | Gross (%) | Net (%) | Index (%) | Excess Return (bps) |
|-------------------------|-----------|---------|-----------|---------------------|
| Year to Date            | 18.29     | 17.23   | 2.69      | 1560                |
| 1 Year                  | 22.94     | 21.73   | 2.81      | 2013                |
| 3 Years                 | 26.22     | 25.02   | 9.97      | 1624                |
| 5 Years                 | 18.27     | 17.13   | 8.22      | 1005                |
| 7 Years                 | 19.96     | 18.80   | 13.21     | 676                 |
| 10 Years                | 21.88     | 20.69   | 15.55     | 633                 |
| Since Inception*        | 11.09     | 9.99    | 6.56      | 453                 |

### Calendar Year Performance

| Periods Ending 12/31 | Gross (%) | Net (%) | Index (%) | Excess Return (bps) |
|----------------------|-----------|---------|-----------|---------------------|
| 2017                 | 39.03     | 37.69   | 22.17     | 1687                |
| 2016                 | 26.11     | 24.88   | 11.32     | 1479                |
| 2015                 | 2.57      | 1.55    | (1.38)    | 395                 |
| 2014                 | 6.47      | 5.40    | 5.60      | 87                  |
| 2013                 | 39.89     | 38.53   | 43.30     | (342)               |
| 2012                 | 13.29     | 12.16   | 14.59     | (130)               |
| 2011                 | 17.82     | 16.69   | (2.91)    | 2073                |
| 2010                 | 14.82     | 13.69   | 29.09     | (1427)              |
| 2009                 | 38.51     | 37.16   | 34.47     | 404                 |
| 2008                 | (33.61)   | (34.32) | (38.54)   | 493                 |
| 2007                 | (0.59)    | (1.59)  | 7.05      | (764)               |
| 2006                 | 15.80     | 14.66   | 13.35     | 246                 |
| 2005                 | 1.88      | 0.85    | 4.15      | (227)               |
| 2004                 | 12.82     | 11.68   | 14.31     | (149)               |
| 2003                 | 38.44     | 37.10   | 48.54     | (1011)              |
| 2002                 | (23.82)   | (24.60) | (30.26)   | 644                 |
| 2001                 | 0.48      | (0.49)  | (9.23)    | 971                 |
| 2000                 | 6.28      | 5.22    | (22.43)   | 2871                |
| 1999                 | 31.19     | 29.92   | 43.09     | (1190)              |
| 1998                 | 3.33      | 2.28    | 1.23      | 210                 |

\*January 1, 1998

***This material is deemed supplemental and complements the performance and disclosure at the end of this presentation.***

Returns for the Kayne Anderson Rudnick composite are preliminary. All periods less than one year are total returns and are not annualized. For further details on the composite, please see the disclosure statement in this presentation. Data is obtained from FactSet Research Systems and is assumed to be reliable. Numbers may not always add up due to rounding. Past performance is no guarantee of future results.

# Biographies

## Small Cap Sustainable Growth Team



Kayne Anderson Rudnick  
Investment Management



**Douglas S. Foreman, CFA**

*Chief Investment Officer and Member of the Executive Management Committee*

Mr. Foreman has approximately 32 years of investment experience. Before joining Kayne Anderson Rudnick in 2011, Mr. Foreman was Director of Equities at HighMark Capital Management and before that he was Group Managing Director and Chief Investment Officer of U.S. equities at Trust Company of the West (TCW). He earned a B.S. in Marine Engineering from The U.S. Naval Academy and an M.B.A. from Harvard University. Mr. Foreman is a Chartered Financial Analyst charterholder.



**Todd Bailey, CFA**

*Portfolio Manager and Senior Research Analyst with primary research responsibilities for the small and mid-capitalization energy and consumer discretionary sectors*

Before joining Kayne Anderson Rudnick in 2002, Mr. Bailey worked as an Associate Analyst in equity research at Prudential Securities and before that was an Equity Research Associate at RNC Capital Management. He has approximately 19 years of equity research experience. Mr. Bailey earned a B.S. in Finance from Northern Arizona University and an M.B.A. from the University of Southern California. Mr. Bailey is a Chartered Financial Analyst charterholder.



**Jon K. Christensen, CFA**

*Portfolio Manager and Senior Research Analyst with primary research responsibilities for the small and mid-capitalization health care sector*

Before joining Kayne Anderson Rudnick in 2001, Mr. Christensen was a Portfolio Manager and Senior Research Analyst for Doheny Asset Management and has approximately 23 years of equity research experience. He earned a B.S. in Mathematics/Applied Science from the University of California, Los Angeles, and an M.B.A. from the California State University, Long Beach. Mr. Christensen is a Chartered Financial Analyst charterholder.

# Biographies

## Small Cap Sustainable Growth Team



Kayne Anderson Rudnick  
Investment Management



**Julie Biel, CFA**

*Senior Research Analyst with primary research responsibilities for the small and mid-capitalization technology sector*

Before joining Kayne Anderson Rudnick in 2013, Ms. Biel worked at Imperial Capital as an Equity Research Associate. Prior to business school, Ms. Biel was an Equity Research Associate at Merrill Lynch. She has approximately 10 years of equity research experience. Ms. Biel earned a B.A., in Economics and Psychology from New York University and an M.B.A. from the University of California, Los Angeles. Ms. Biel is a Chartered Financial Analyst charterholder.



**Julie Kutasov**

*Senior Research Analyst with primary research responsibilities for the small and mid-capitalization materials and processing sector*

Before joining Kayne Anderson Rudnick in 2001, Ms. Kutasov worked at Goldman Sachs in a program focused on investment management for high-net worth individuals and at Arthur Andersen as a Senior Associate leading teams that provided financial-audit and business-advisory services to a variety of clients in service-related industries. Ms. Kutasov holds a Certified Public Accountant license (currently inactive) in the state of California. She has approximately 17 years of equity research experience. Ms. Kutasov earned a B.A. in Business Economics from the University of California, Los Angeles, where she graduated summa cum laude, and an M.B.A. from Harvard Business School.



**Craig Stone**

*Senior Research Analyst with primary research responsibilities for the small and mid-capitalization producer durables sector*

Mr. Stone has approximately 29 years of equity research experience. Before joining Kayne Anderson Rudnick in 2000, Mr. Stone was a Portfolio Manager at Doheny Asset Management. He earned a B.S. in International Business from San Francisco State University and an M.B.A. from the University of Southern California.



**Chris Wright, CFA**

*Senior Research Analyst with primary research responsibilities for the small and mid-capitalization financials sector*

Before joining Kayne Anderson Rudnick in 2012, Mr. Wright worked at Alvarez & Marsal as a Senior Associate in Turnarounds and Restructuring, Trust Company of the West as a summer Analyst in Equity Research, and at Houlihan Lokey Howard & Zuckin as an Associate in the Investment Banking Financial Institutions Group. He has approximately six years of equity research experience. Mr. Wright earned a B.S.E., concentration in Finance, from the Wharton School at the University of Pennsylvania and an M.B.A. from the University of California, Los Angeles where he was selected for the Student Investment Fund. Mr. Wright is a Chartered Financial Analyst charterholder.

# Biographies

## Small Cap Sustainable Growth Team



Kayne Anderson Rudnick  
Investment Management



### Sean Dixon

*Research Analyst with primary research responsibilities for the small and mid-capitalization consumer discretionary and producer durables sectors*

Before joining Kayne Anderson Rudnick in 2018, Mr. Dixon worked as an analyst at Denver Investments, covering international small-cap stocks. Mr. Dixon has approximately nine years of equity research experience. Mr. Dixon earned his bachelor's degree in finance from the University of Denver.



### Adam Xiao, CFA

*Research Analyst with primary research responsibilities for the small and mid-capitalization consumer staples, financials and producer durables sectors*

Before joining Kayne Anderson Rudnick in 2018, Mr. Xiao was with Diamond Hill Capital Management, where he was a senior associate covering telecommunications and networking equipment companies. He has approximately three years of equity research experience. Mr. Xiao earned his B.A. in operations research and management science from UC Berkeley and his MBA from Columbia Business School. Mr. Xiao is a Chartered Financial Analyst charterholder.

# Biographies

## Institutional Client Services Team

---



Kayne Anderson Rudnick  
Investment Management



### **Daniela Bailly**

*Managing Director - Consultant Relations*

310-284-5540 | [DBailly@kayne.com](mailto:DBailly@kayne.com)

Ms. Bailly has approximately 23 years of experience in the investment management industry. Before rejoining Kayne Anderson Rudnick in 2009, Ms. Bailly was Vice President of Marketing at Bjurman, Barry & Associates, where she covered the central territories as well as National Sales, working closely with Portfolio Managers and Management. Before that position, she was an Internal Wholesaler and Key Accounts Manager for the Advisory Services Group for Kayne Anderson Rudnick.



### **Stephanie Gillman**

*Managing Director - Institutional Client Services*

310-282-7947 | [SGillman@kayne.com](mailto:SGillman@kayne.com)

Ms. Gillman has approximately 25 years of experience in the investment management industry. Before joining Kayne Anderson Rudnick in 1999 as a Marketing Analyst, Ms. Gillman was a Senior Communications Specialist at Capital Guardian Trust Company and a Marketing Associate at Mercer Global Advisors, a financial-planning firm based in Santa Barbara, California. Ms. Gillman earned a B.A. in Business Economics from the University of California, Santa Barbara.



### **Maritza Gonzalez**

*Assistant Director - Institutional Client Services*

310-284-6423 | [MGonzalez@kayne.com](mailto:MGonzalez@kayne.com)

Ms. Gonzalez has approximately 17 years of experience in the investment management industry. Before joining Kayne Anderson Rudnick in 2004, Ms. Gonzalez spent nine years of her career at the Capital Group Companies working in a variety of roles, including Presentation Development Coordinator. Ms. Gonzalez earned a B.A. in Sociology from the California State University Northridge and a J.D. from the Glendale University College of Law.





**Stephen A. Rigali, CFA**

*Executive Managing Director and Member of the Executive Management Committee*

Mr. Rigali has approximately 37 years of experience in the investment management industry. Before joining Kayne Anderson Rudnick in 1991, Mr. Rigali was a Vice President at Shearson Lehman Brothers. Mr. Rigali earned a B.S. in Business and Economics from Loyola Marymount University. He is a Chartered Financial Analyst charterholder and a member of the CFA Society of Los Angeles, Inc.



**Douglas S. Foreman, CFA**

*Chief Investment Officer and Member of the Executive Management Committee*

Mr. Foreman has approximately 32 years of investment experience. Before joining Kayne Anderson Rudnick in 2011, Mr. Foreman was Director of Equities at HighMark Capital Management and before that he was Group Managing Director and Chief Investment Officer of U.S. equities at Trust Company of the West (TCW). He earned a B.S. in Marine Engineering from The U.S. Naval Academy and an M.B.A. from Harvard University. Mr. Foreman is a Chartered Financial Analyst charterholder.



**Jeannine G. Vanian**

*Chief Operating Officer and Member of the Executive Management Committee*

Ms. Vanian has approximately 31 years of experience in the investment management industry, including 29 years with Kayne Anderson Rudnick. Ms. Vanian attended The American University in Cairo, Egypt.

# Representative Clients



Kayne Anderson Rudnick  
Investment Management

## Corporate

Coffman Engineers  
Lewitt, Hackman, et al.  
Majestic Life Insurance Company  
Majestic Mortuary Services  
Morley Group  
National Federation of Independent Business  
Tennant Company

## Endowments & Foundations

Community West Foundation  
Dumont Foundation  
Hartford HealthCare  
LeRoy Haynes Center  
San Francisco Opera Association  
Santa Barbara Zoological Foundation

## Public Funds

Amarillo Firemen's Relief and Retirement Fund  
Champaign Police  
City of Aurora Police  
City of Deerfield Beach  
City of North Miami  
Elgin Firefighters Pension Fund  
Elgin Police Pension Fund  
Intergovernmental Risk Management Agency  
Rockford Police Pension Fund  
The Maywood Police Pension Fund

## Religious Organizations

Brethren Benefit Trust  
First Presbyterian Society  
Texas Presbyterian Foundation

## Taft-Hartley

Chicago Transit Authority  
Western States Insulators and Allied Workers

*The above is a partial list of representative clients whose names have been chosen based on their universal name recognition only. It is not known whether the client approves or disapproves of Kayne Anderson Rudnick Investment Management, LLC or the investment advisory services provided. This list is provided for informational purposes only. It does not constitute an endorsement or testimonial by these clients.*

# Disclosure

## Small Cap Sustainable Growth Portfolio



Kayne Anderson Rudnick  
Investment Management

Kayne Anderson Rudnick Investment Management, LLC claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS® standards. Kayne Anderson Rudnick Investment Management, LLC has been independently verified for the period from January 1, 1999 through December 31, 2017.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS® standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS® standards. The Small Cap Sustainable Growth Composite has been examined for the period from January 1, 1999 through December 31, 2017. The verification and performance examination reports are available upon request.

Kayne Anderson Rudnick Investment Management, LLC, a wholly owned subsidiary of Virtus Investment Partners, Inc., is a registered investment advisor under the Investment Advisers Act of 1940. Registration of an Investment Advisor does not imply any level of skill or training. Kayne Anderson Rudnick Investment Management, LLC manages a variety of equity and fixed-income strategies focusing exclusively on securities the firm defines as high quality.

The composite includes all fully discretionary institutional and pooled Small Cap Sustainable Growth Portfolios. Small Cap Sustainable Growth Portfolios are invested in equity securities with market capitalizations in line with the Russell 2000® Growth Index, that have market control, rising free cash flow, shareholder-oriented management, strong consistent profit growth and low-debt balance sheets. For comparison purposes, the composite is measured against the Russell 2000® Growth Index. The Russell 2000® Growth Index is a market capitalization-weighted index of growth-oriented stocks of the 2,000 smallest companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. The index is calculated on a total-return basis with dividends reinvested. Benchmark returns are not covered by the report of the independent verifiers. The composite was created in January 1998. A list of composite descriptions and policies for valuing portfolios, calculating performance and preparing compliant presentations are available upon request.

Prior to January 1, 2011, the composite minimum was \$250,000. Prior to January 1, 2011, accounts that experienced a significant cash flow, defined as aggregate flows that exceeded 25% of the account's beginning of period market value, were temporarily removed from the composite. As of January 1, 2011, the composite was redefined to include both institutional and mutual fund [or pooled] accounts. Previously, only institutional accounts were included.

The standard management fee schedule currently in effect is as follows: 1.00% for the first \$25 million; 0.80% on the next \$25 million; 0.70% on the balance. Actual management fees charged may vary depending on applicable fee schedules and portfolio size, among other things. Additional information may be found in Part 2A of Form ADV, which is available on request. The performance information is supplied for reference. Past performance is no guarantee of future results. Results will vary among accounts. The U.S. dollar is the currency used to express performance. Returns are presented net of transaction fees and include the reinvestment of all income. Gross returns will be reduced by investment management fees and other expenses that may be incurred in the management of the account. Model net returns have been calculated by deducting 1/12th of the highest tier of the standard management fee schedule in effect for the respective period from the gross composite returns on a monthly basis.

Internal dispersion is calculated using the asset-weighted standard deviation of annual gross returns for accounts in the composite for the entire year. For those years when less than five accounts were included for the full year, no dispersion measure is presented. The three-year annualized ex-post standard deviation measures the variability of the composite (using gross returns) and the benchmark for the 36-month period ended at the following dates:

| 3-Yr Annualized<br>Standard Deviation (%) |           |           |      |                                       |  |                         |                               |                             |   |                        |
|---|-----------|-----------|------|---------------------------------------|--|-------------------------|-------------------------------|-----------------------------|---|------------------------|
| December 31                               | Composite | Benchmark | Year | Total Firm<br>Assets<br>(\$ millions) | Total Composite<br>Assets<br>(\$ millions) | Accounts at<br>Year End | Gross Annual<br>Return<br>(%) | Net Annual<br>Return<br>(%) | Russell 2000®<br>Growth Index<br>Annual Return<br>(%) | Internal<br>Dispersion |
| 2011                                      | 19.74     | 24.65     | 2008 | 3,445                                 | 12   | 14                      | (33.61)                       | (34.32)                     | (38.54)   | 1.04                   |
| 2012                                      | 15.54     | 21.01     | 2009 | 4,010                                 | 11   | 11                      | 38.51                         | 37.16                       | 34.47   | 0.94                   |
| 2013                                      | 12.22     | 17.52     | 2010 | 4,729                                 | 12   | 12                      | 14.82                         | 13.69                       | 29.09   | 0.22                   |
| 2014                                      | 12.35     | 14.02     | 2011 | 5,232                                 | 180  | 14                      | 17.82                         | 16.69                       | (2.91)  | 0.51                   |
| 2015                                      | 14.08     | 15.16     | 2012 | 6,545                                 | 155  | 17                      | 13.29                         | 12.16                       | 14.59   | 0.42                   |
| 2016                                      | 14.85     | 16.91     | 2013 | 7,841                                 | 232  | 23                      | 39.89                         | 38.53                       | 43.30   | 1.42                   |
| 2017                                      | 12.69     | 14.80     | 2014 | 7,989                                 | 205  | 20                      | 6.47                          | 5.40                        | 5.60  | 0.40                   |
|   |           |           | 2015 | 8,095                                 | 244  | 17                      | 2.57                          | 1.55                        | (1.38)  | 0.40                   |
|   |           |           | 2016 | 9,989                                 | 614  | 19                      | 26.11                         | 24.88                       | 11.32   | 0.54                   |
|   |           |           | 2017 | 14,609                                | 2,038                                      | 40                      | 39.03                         | 37.69                       | 22.17   | 1.40                   |

# Alameda County Employees' Retirement Association

## Small Cap Growth

January 09, 2019

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# Important Disclosures – Small Cap Growth Strategy

This content is for informational and educational purposes only and not intended as investment advice or a recommendation to buy or sell any security. Investment advice and recommendations can be provided only after careful consideration of an investor's objectives, guidelines, and restrictions. Any investment or strategy mentioned herein may not be suitable for every investor. Factual information has been taken from sources we believe to be reliable, but its accuracy, completeness or interpretation cannot be guaranteed. Information and opinions expressed are those of the author(s) and may not reflect the opinions of other investment teams within William Blair. Information is current as of the date appearing in this material only and subject to change without notice.

## **Performance and Fees**

**Past performance is not indicative of future returns.** Gross investment performance assumes reinvestment of dividends and capital gains, is gross of investment management fees and net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest fee charged to any account in the composite. Investment management fees are described in William Blair's Form ADV Part 2A.

## **Risk**

The strategy's returns will vary, and you could lose money by investing in the strategy. The strategy invests most of its assets in equity securities of small cap domestic growth companies where the primary risk is that the value of the equity securities it holds might decrease in response to the activities of those companies or market and economic conditions. Individual securities may not perform as expected or a strategy used by the Adviser may fail to produce its intended result. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Small cap stocks are also more sensitive to purchase/sale transactions and changes in the issuer's financial condition. These risks are intensified for investments in micro-cap companies. Individual securities may not perform as expected or a strategy used by the Adviser may fail to produce its intended result. Convertible securities may be called before intended, which may have an adverse effect on investment objectives. The strategy is not intended to be a complete investment program. The strategy is designed for long-term investors.

## **Benchmark**

The Russell 2000® Growth Index consists of small-capitalization companies with above average price-to-book ratios and forecasted growth rates. The Index is unmanaged and does not incur fees or expenses. It is not possible to directly invest in an unmanaged index.

For more information, please visit us at [www.williamblair.com](http://www.williamblair.com)

# Contents

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### Overview

## SECTION II

### Philosophy and Process

## SECTION III

### Portfolio Characteristics and Performance

## SECTION IV

### Appendix

# Overview

# Active Never Rests – Ownership, Culture, and Investment Approach

Our client-focused approach underpins each of three key fundamental pillars

## Ownership

- 100% active employee-owned
- Alignment of interests; no outside influences or constantly changing short-term priorities
- Stable and entrepreneurial environment helps retain top talent
- Client focus; we build client relationships that last year after year rather than quarter to quarter

## Culture

- Stability and evolution; we evolve with you
- Collaborative environment where investment professionals can thrive
- Professionals incented to seek long-term success for clients
- Transparency and an unwavering commitment to active investing and strong client outcomes

## Investment Approach

- Unique voices and shared values; autonomous investment teams have freedom and flexibility to deliver high-conviction active management
- Deep intellectual curiosity and conviction promotes ongoing investment process improvements while each team stays true to its investment philosophy
- Consistent, rigorous, and repeatable process enables teams to seek performance our clients expect





# Assets Under Management

**\$62.2 billion in assets under management**  
As of September 30, 2018

| U.S. Strategies<br>\$21.8 billion     |                      |   |
|---------------------------------------|----------------------|---|
| All Cap Growth                        | \$707 million        | David Fording, CFA  |
| Large Cap Growth                      | \$2.6 billion        | James Golan, CFA<br>David Ricci, CFA  |
| Mid Cap Growth                        | \$3.3 billion        | Dan Crowe, CFA<br>Robert Lanphier   |
| Small-Mid Cap Growth<br>(Closed 3/18) | \$10.7 billion       | Dan Crowe, CFA<br>Robert Lanphier   |
| Small-Mid Cap Core                    | \$388 million        | Dan Crowe, CFA<br>Robert Lanphier<br>Ward Sexton, CFA                           |
| <b>Small Cap Growth</b>               | <b>\$1.2 billion</b> | <b>Mike Balkin<br/>Ward Sexton, CFA</b>   |
| Small-Mid Cap Value                   | \$82 million         | Chad Kilmer, CFA<br>Mark Leslie, CFA<br>David Mitchell, CFA                     |
| Small Cap Value                       | \$1.8 billion        | Chad Kilmer, CFA<br>Mark Leslie, CFA<br>David Mitchell, CFA                     |
| Fixed Income                          | \$1.2 billion        | Christopher Vincent, CFA<br>Todd Kurisu, CFA<br>Kathy Lynch, CFA<br>Paul Sularz |

| Non-U.S. Strategies<br>\$38.3 billion               |                |
|---|----------------|
| International Growth<br>(Closed 6/12)               | \$15.4 billion |
| International Leaders                               | \$5.4 billion  |
| International Developed Plus                        | \$1.0 billion  |
| ADR Growth  | \$165 million  |
| Intl. Small Cap Growth<br>(Closed 3/11)             | \$3.2 billion  |
| Emerging Markets Growth                             | \$4.4 billion  |
| Emerging Markets Leaders                            | \$4.3 billion  |
| Emerging Markets Small Cap Growth<br>(Closed 10/13) | \$1.4 billion  |
| China A-Shares Growth                               | \$10 million   |
| Global Leaders                                      | \$2.9 billion  |
| Systematic International All Cap Core               | \$7 million    |
| Systematic International Core                       | \$5 million    |
| Systematic Emerging Markets All Cap Core            | \$6 million    |

| Dynamic Allocation Strategies<br>\$2.0 billion |
|--|
| Macro Allocation                               |
| Global Opportunity                             |
| Dynamic Diversified Allocation                 |
| Global Diversified Return                      |
| Absolute Return Currency                       |

As used on this page, "William Blair" refers to William Blair Investment Management, LLC and affiliates unless otherwise noted. For more information about William Blair, please see <http://www.williamblair.com/About-William-Blair.aspx>. This material has been distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy, or investment product. Strategy availability may be limited to certain investment vehicles; not all investment vehicles may be available to all investors. Unless otherwise noted, all data shown is as of the date of this material. Assets shown in U.S. dollar.

# Representative Client List

| Corporate   | Public Plans and Taft-Hartley  |
|---|--|
| <ul style="list-style-type: none"> <li>• Air Products &amp; Chemical, Inc.</li> <li>• AT&amp;T</li> <li>• Bank of America</li> <li>• Boeing Company</li> <li>• Caterpillar Inc.</li> <li>• Consolidated Communications</li> <li>• Deluxe Corporation</li> <li>• PGA TOUR, Inc.</li> </ul>   | <ul style="list-style-type: none"> <li>• City of Lansing ERS &amp; PFRS</li> <li>• City of Orlando Pension Plans</li> <li>• City &amp; County of San Francisco ERS</li> <li>• Contra Costa County Employees' Retirement Association</li> <li>• County Employees' Annuity and Benefit Fund of Cook County</li> <li>• El Paso Firemen and Policemen's Pension Fund</li> <li>• Employees' Retirement System of the City of Milwaukee</li> <li>• Firemen's Annuity &amp; Benefit Fund of Chicago</li> <li>• Florida State Board of Administration</li> <li>• Illinois State Board of Investment</li> <li>• Illinois Municipal Retirement Fund</li> <li>• Iowa Judiciary</li> <li>• Laborers' Annuity and Benefit Fund of Chicago</li> <li>• Municipal Employees' Annuity &amp; Benefit Fund of Chicago</li> <li>• Municipal Police Employees' Retirement System of Louisiana</li> <li>• Orange County ERS</li> <li>• Oregon State Treasury</li> <li>• Pensionskasse SBB (Swiss Federal Railway)</li> <li>• Policemen's Annuity and Benefit Fund of Chicago</li> <li>• Sacramento County ERS</li> <li>• State of Connecticut Retirement Plans and Trust Funds</li> <li>• Teachers' Retirement System of Louisiana</li> <li>• Tulare County Employees' Retirement Association</li> <li>• Washington State Investment Board</li> <li>• Workplace Safety and Insurance Board of Ontario</li> </ul> |
| Endowment/Foundation  |  |
| <ul style="list-style-type: none"> <li>• The College of William and Mary Foundation</li> <li>• Denison University</li> <li>• Indiana University Foundation</li> <li>• Landmarks Financial Corporation</li> <li>• McGill University</li> <li>• Toledo Museum of Art</li> <li>• Truth Initiative</li> <li>• University of California, Irvine Foundation</li> </ul>  |  |
| Healthcare & Not-For-Profit   |  |
| <ul style="list-style-type: none"> <li>• Advocate Healthcare</li> <li>• The Carle Foundation</li> <li>• Catholic Health Initiatives</li> <li>• Children's Hospital of New Orleans</li> <li>• Clerics of St. Viator</li> <li>• Kaiser Permanente</li> <li>• NorthShore University HealthSystem</li> <li>• OhioHealth</li> <li>• Rush University Medical Center</li> <li>• SKL Investment Group, LLC</li> </ul> |  |
|   | Sub Advisory   |
|   | <ul style="list-style-type: none"> <li>• Charles Schwab</li> <li>• Fidelity</li> <li>• Goldman Sachs</li> <li>• Lombard Odier Darier Hentsch</li> <li>• Northern Trust</li> <li>• Prudential</li> <li>• Russell Investment Group</li> <li>• SEB Group</li> <li>• SEI</li> <li>• UBS</li> </ul>   |

As of December 2018.

This list is comprised of representative clients that have either given William Blair express permission to use their names or for whose services we provide have been made part of the public domain. Inclusion indicates the scope of clients served, but is not to be construed as an approval or disapproval of William Blair or its advisory services.

# Small Cap Growth Portfolio Team

| Portfolio Management  |   |
|---|---|
| <b>Mike Balkin, Partner</b><br>28 years in industry<br>25 years at William Blair <sup>1</sup><br>BA, Northwestern Univ. | <b>Ward Sexton, CFA, Partner</b><br>19 years in industry<br>19 years at William Blair<br>MBA, University of Chicago<br>BS, University of Illinois |

| Portfolio Specialists  |  |  |
|--|--|--|
| <b>Matt McLaughlin, CFA, CAIA</b><br>10 years in industry<br>2 years at William Blair<br>BA, Loras College | <b>Tara Patock, CFA</b><br>13 years in industry<br>5 years at William Blair<br>MBA, Univ. of Chicago<br>BBA, Loyola University | <b>Patrick Quinn, CFA, Partner<sup>2</sup></b><br>18 years in industry<br>14 years at William Blair<br>MBA, Univ. of Chicago<br>BS, Indiana University |

## Research Analysts

**Henry Baby, CFA**  
**Research Analyst – U.S. Small Cap Generalist**  
 13 years in industry  
 4 years at William Blair  
 MBA, University of Chicago  
 BS, Boston College

**Mark Thompson, CFA, Partner**  
**Research Analyst – U.S. Small Cap Generalist**  
**Associate Portfolio Manager<sup>3</sup>**  
 19 years in industry  
 12 years at William Blair  
 MBA, BBA, University of Iowa

|                         | Consumer  | Financials  | Healthcare  | Industrials   | Information Technology   | Resources  |
|-------------------------|---|---|---|---|--|--|
| <b>U.S. Small Cap</b>   | <b>Michael Lasota, CFA</b><br>10 years in industry<br>4 years at William Blair<br>MBA, University of Chicago<br>BA, University of Chicago | <b>Mark Lane, Partner<sup>4</sup></b><br>26 years in industry<br>20 years at William Blair<br>MBA, University of Chicago<br>BA, Northwestern University | <b>Kurt Wiese, CFA, CPA, Partner</b><br>20 years in industry<br>18 years at William Blair<br>MBA, University of Chicago<br>BS, Indiana University | <b>Jim Jones, CFA, Partner<sup>5</sup></b><br>18 years in industry<br>8 years at William Blair<br>MBA, University of North Carolina<br>BS, Miami University | <b>Corey Tobin, Partner<sup>5</sup></b><br>19 years in industry<br>16 years at William Blair <sup>6</sup><br>MBA, Kellogg School of Management<br>MS, University of Chicago<br>BBA, University of Michigan | <b>Nick Zimmerman, CFA</b><br>14 years in industry<br>1 year at William Blair<br>MS, University of Wisconsin<br>BS, University of Illinois |
| Research Associates (9) |   |   |   |   |  |  |

Analysts average 18 years industry experience and 12 years at William Blair. As of December 2019.

<sup>1</sup>14 years in industry at William Blair from November 1990 to 2005. Rejoined the firm in June 2008.

<sup>2</sup>Patrick Quinn also serves as Head of U.S. Equities.

<sup>3</sup>Mark Thompson also serves as an Associate Portfolio Manager for the Small Cap Growth strategy in micro caps across sectors.

<sup>4</sup>Mark Lane (Mid/Large Financials Analyst) is covering small cap financials on an interim basis. We have an opening for a dedicated small cap financials analyst.

<sup>5</sup>Jim Jones and Corey Tobin also serve as Co-Directors of U.S. Growth Research.

<sup>6</sup>9 years of experience at William Blair from November 2002 to 2011. Rejoined the firm in August 2012.

# Philosophy and Process

# Investment Philosophy

## Quality Growth

Superior, longer-term earnings growth

- Strong management
- Sustainable business model
- Solid financials

## Market Inefficiencies We Seek to Exploit

### Traditional Quality Growth

A better company than the market expects

- Faster growing
- More durable growth rates

### Fallen Quality Growth

Short term issue

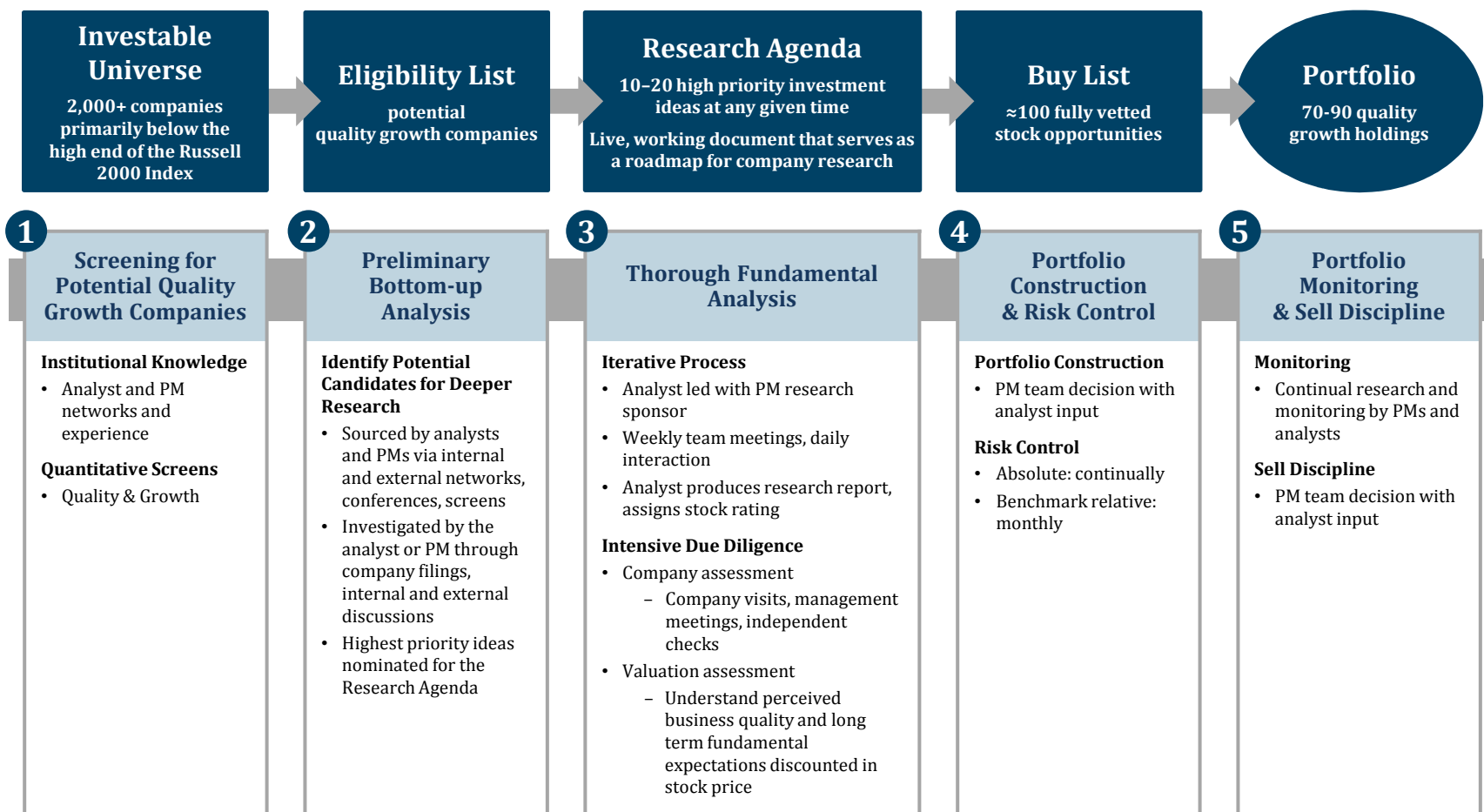
- Growth is non-linear
- Market overreacts
- Deep company knowledge

### Undiscovered Quality Growth

Not broadly known or understood

- Insufficient analyst coverage
- Company change/evolution

# Small Cap Growth Investment Process



# Investment Process – Company Assessment

## Identifying Durable Business Franchises

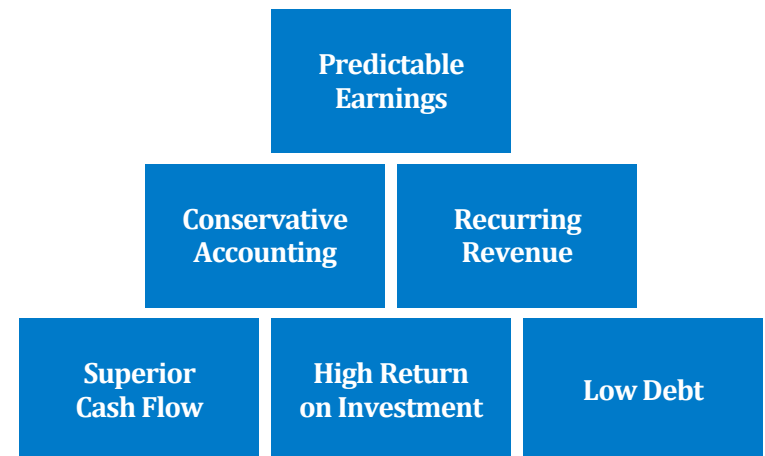
### Strong Management



### Sustainable Business Model



### Solid Financials



# Investment Process

## Valuation Framework & Market Psychology

We seek to triangulate on a stock's risk/reward through traditional and non-traditional valuation metrics, as well as market psychology.

- Traditional valuation analysis – Compare a stock relative to its historical valuation, its peer group and the market.
- Non-traditional valuation analysis – Compare valuations across companies with similar financial characteristics (market opportunity, growth rate, margin structure, economic sensitivity, etc.)
- Market psychology – Does the price reflect our view of the company's long-term fundamentals? Has short-term sentiment created an attractive long-term opportunity?



# Investment Process

## Small Cap Growth Portfolio Construction and Risk Control

### Portfolio Construction

#### Position Size Parameters

|                          |           |
|--------------------------|-----------|
| Typical Initial Position | 0.5–1.25% |
| Position Limit at Market | 5%        |
| Portfolio Holdings       | 70-90     |

#### Market Cap Range

Primarily below the high end of the Russell 2000 Index at time of purchase

#### Sector Weight Parameters

Sector weights are generally .5x to 2x the benchmark weights of the major economic sectors

### Risk Control

#### Absolute

- Best possible understanding of company
- Valuation discipline
- Position size management

#### Benchmark Relative

- Sector, industry and market cap weights
- Barra multi-factor risk analysis
- Internally-developed quantitative models

Weights shown are percentages of total net assets. Sector weights may vary over time as benchmark index weights shift. The data shown above is taken from a representative account. Calculated in FactSet based on Global Industry Classification Sectors (GICS).

# Investment Process – Sell Discipline

## Are fundamentals intact?

- Change in management
- Change in competitive environment
- Change in company strategy
- Change in growth rate

## Is valuation attractive?

- Absolute and relative multiples
- Relative to other companies with similar financial characteristics

## Are portfolio construction parameters met?

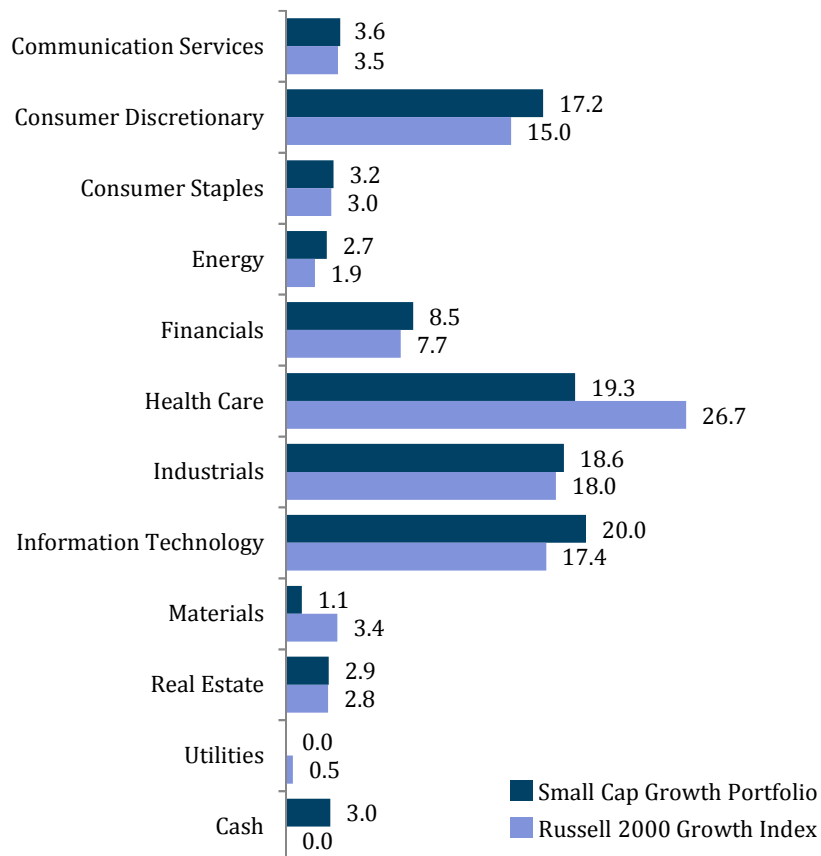
- Positions outside of parameters

# Portfolio Characteristics and Performance

# Small Cap Growth Portfolio Composition

## As of November 30, 2018

### Sector Diversification



### Top Holdings

|                               | % In Portfolio | % In Index  |
|-------------------------------|----------------|-------------|
| Healthcare Services Group     | 1.84           | 0.34        |
| Codexis Inc.                  | 1.76           | 0.11        |
| Laureate Education Inc.       | 1.61           | -           |
| Euronet Worldwide Inc.        | 1.58           | -           |
| Hilton Grand Vacations Inc.   | 1.56           | -           |
| BWX Technologies Inc.         | 1.52           | -           |
| j2 Global Inc.                | 1.51           | 0.34        |
| Agilysys Inc.                 | 1.51           | 0.01        |
| Brink's Co/The                | 1.49           | 0.35        |
| Horizon Pharma Plc            | 1.48           | 0.32        |
| Ligand Pharmaceuticals        | 1.47           | 0.32        |
| Adtalem Global Education Inc. | 1.46           | -           |
| Glaukos Corp.                 | 1.46           | 0.21        |
| Cable One Inc.                | 1.45           | -           |
| FirstCash Inc.                | 1.43           | 0.38        |
| <b>Total</b>                  | <b>23.12</b>   | <b>2.37</b> |

|                      | Portfolio | Index |
|----------------------|-----------|-------|
| Number of Securities | 88        | 1,239 |

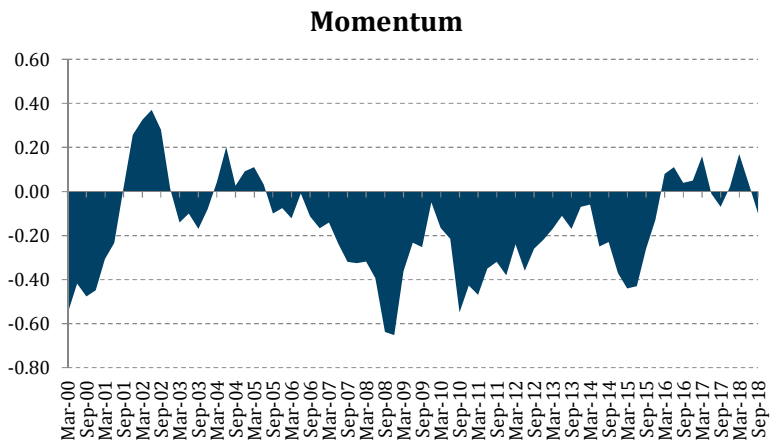
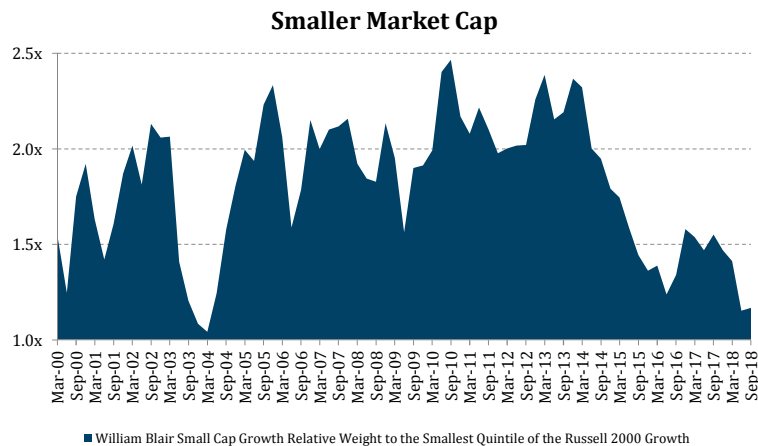
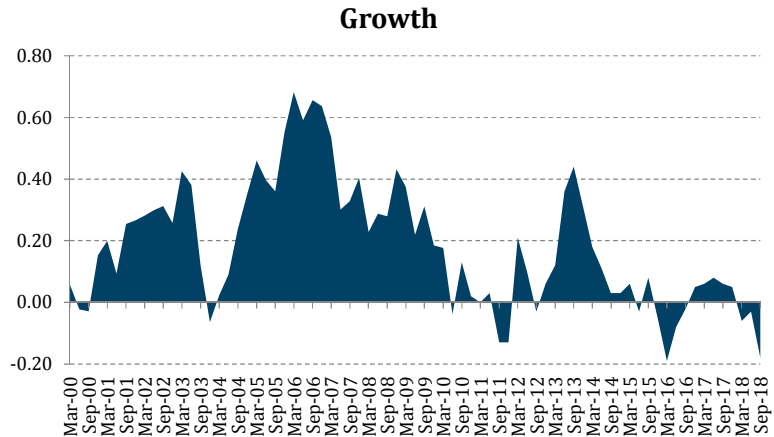
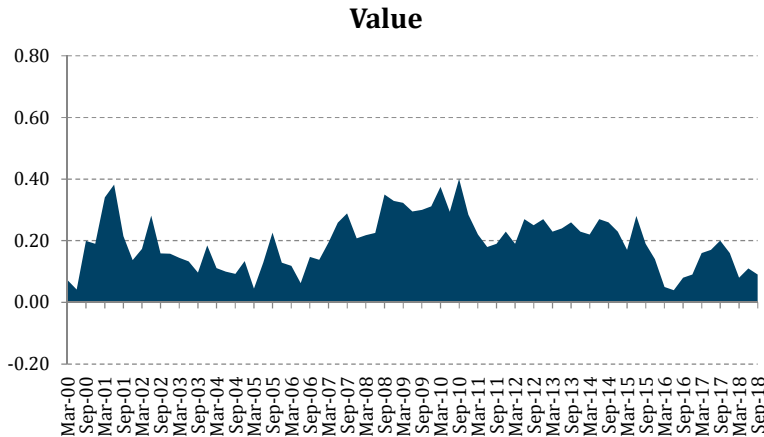
The data shown above is based on the strategy's representative portfolio. Calculated in Eagle based on Global Industry Classification Sectors (GICS). Top holdings include cash. Individual securities listed in this report are for informational purposes only. Holdings are subject to change at any time. This information does not constitute, and should not be construed as, investment advice or recommendations with respect to the securities listed. Weights shown are percentages of total net assets. Sector weights may vary over time as benchmark index weights shift. Name change from Telecommunication Services to Communication Services effective after close of business on 9/28/18; industry and subindustry reclassifications effective 10/1/18.

# Historical Characteristics

## Valuation Sensitivity, Market Cap Bias and Contrarian Bias

As of September 30, 2018

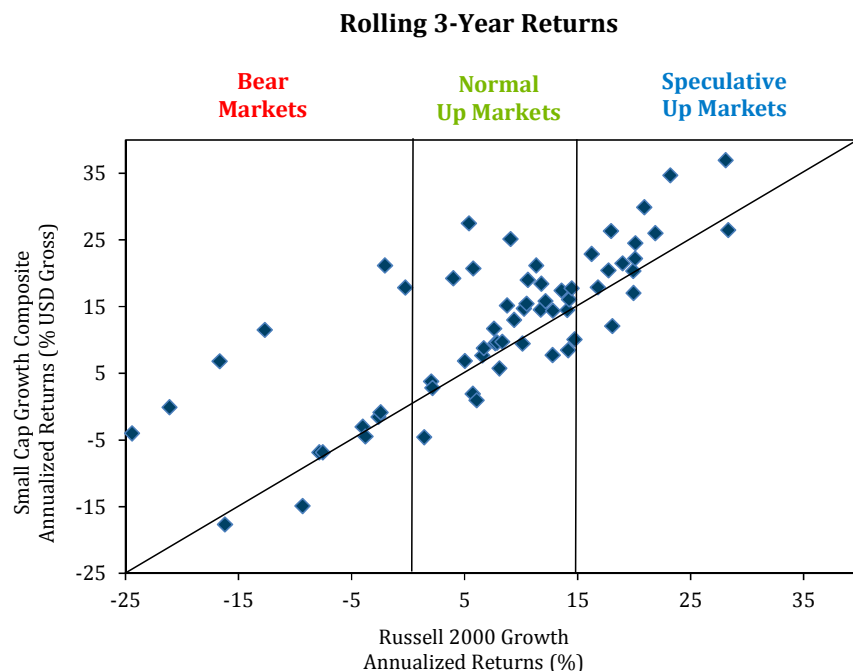
The strategy's three defining characteristics often differentiate it from many small cap growth managers. The strategy tends to exhibit: 1) more valuation sensitivity - while still having growth that is in line with or greater than the Russell 2000 Growth, 2) a smaller market cap bias and 3) a contrarian bias.



The data shown above is based on the strategy's representative portfolio. Growth, Momentum, and Value data calculated in Barra. Blue area represents active exposures. Market caps calculated in FactSet.

# Small Cap Growth Strategy Batting Average

## Since January 1, 2000<sup>1</sup>



**Overall Batting Average:** 72%

| Market Environment                                    |              |
|---|--------------|
| <u><b>Bear Markets (&lt;0% return)</b></u>            |              |
| Small Cap Growth Composite                            | -0.23        |
| Russell 2000 Growth                                   | <u>-9.34</u> |
| <b>Relative Performance</b>                           | <b>9.11</b>  |
| <u><b>Normal Up Markets (0-15% return)</b></u>        |              |
| Small Cap Growth Composite                            | 12.27        |
| Russell 2000 Growth                                   | <u>9.08</u>  |
| <b>Relative Performance</b>                           | <b>3.19</b>  |
| <u><b>Speculative Up Markets (&gt;15% return)</b></u> |              |
| Small Cap Growth Composite                            | 23.93        |
| Russell 2000 Growth                                   | <u>20.58</u> |
| <b>Relative Performance</b>                           | <b>3.35</b>  |

<sup>1</sup>Reflects the inception of the strategy's current management style. At this time, changes were made to the portfolio management team and the way the philosophy was implemented. Actual composite inception precedes this date. This information is supplemental to the composite disclosure slide located in the appendix.

As of September 30, 2018.

Rolling 3-year returns graph calculated using quarterly data. Market environment returns reflect average annualized returns for rolling 3-year periods within each market environment category. Overall batting average reflects the percentage of rolling 3-year periods in which Small Cap Growth outperformed the Russell 2000 Growth Index. Composite Inception 12/31/88.

**Past performance is not indicative of future returns.** Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair's Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.

# Small Cap Growth Strategy

Performance for periods ending November 30, 2018

| Composite Performance (% USD)   | QTD          | YTD          | 1 Yr         | Annualized   |              |              |                             |                               |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------------------|-------------------------------|
|                                 |              |              |              | 3 Yr         | 5 Yr         | 10 Yr        | Since Jan 1 00 <sup>1</sup> | Strategy Inception (Jan 1 89) |
| <b>Small Cap Growth (Gross)</b> | <b>-8.06</b> | <b>13.47</b> | <b>14.14</b> | <b>19.99</b> | <b>12.72</b> | <b>19.91</b> | <b>11.58</b>                | <b>13.31</b>                  |
| Russell 2000 Growth Index       | -11.29       | 2.69         | 2.81         | 9.97         | 8.22         | 15.55        | 5.19                        | 8.38                          |
| Relative Performance (Gross)    | 3.22         | 10.78        | 11.33        | 10.02        | 4.51         | 4.36         | 6.39                        | 4.93                          |

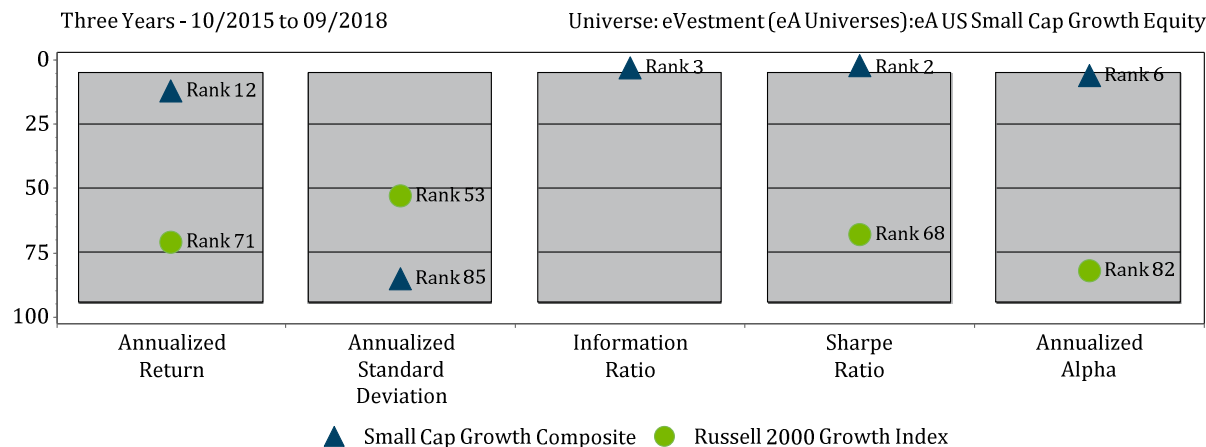
November 2018 performance is preliminary.

<sup>1</sup>Reflects the inception of the strategy's current management style. At this time, changes were made to the portfolio management team and the way the philosophy was implemented. Actual composite inception precedes this date. This information is supplemental to the composite disclosure slide located in the appendix.

**Past performance is not indicative of future returns.** Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair's Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.

# Small Cap Growth Strategy

## Performance Statistics – Three Years (USD Gross)



|   | Annualized Return | Annualized Standard Deviation | Information Ratio | Sharpe Ratio | Annualized Alpha |
|---|-------------------|-------------------------------|-------------------|--------------|------------------|
| 5th Percentile                            | 29.70             | 16.93                         | 1.71              | 1.93         | 10.25            |
| 25th Percentile                           | 22.12             | 14.25                         | 0.80              | 1.69         | 5.71             |
| 50th Percentile                           | 19.57             | 13.35                         | 0.34              | 1.42         | 3.10             |
| 75th Percentile                           | 17.62             | 12.06                         | -0.07             | 1.26         | 0.72             |
| 95th Percentile                           | 12.63             | 11.02                         | -0.93             | 0.94         | -2.18            |
| <b>Small Cap Growth Composite (Gross)</b> | <b>26.29</b>      | <b>11.63</b>                  | <b>1.85</b>       | <b>2.19</b>  | <b>10.14</b>     |
| <b>Russell 2000 Growth Index</b>          | <b>17.98</b>      | <b>13.20</b>                  | <b>--</b>         | <b>1.30</b>  | <b>0.00</b>      |
| Number of Managers                        | 178               | 178                           | 178               | 178          | 178              |

Composite inception January 1, 1989.

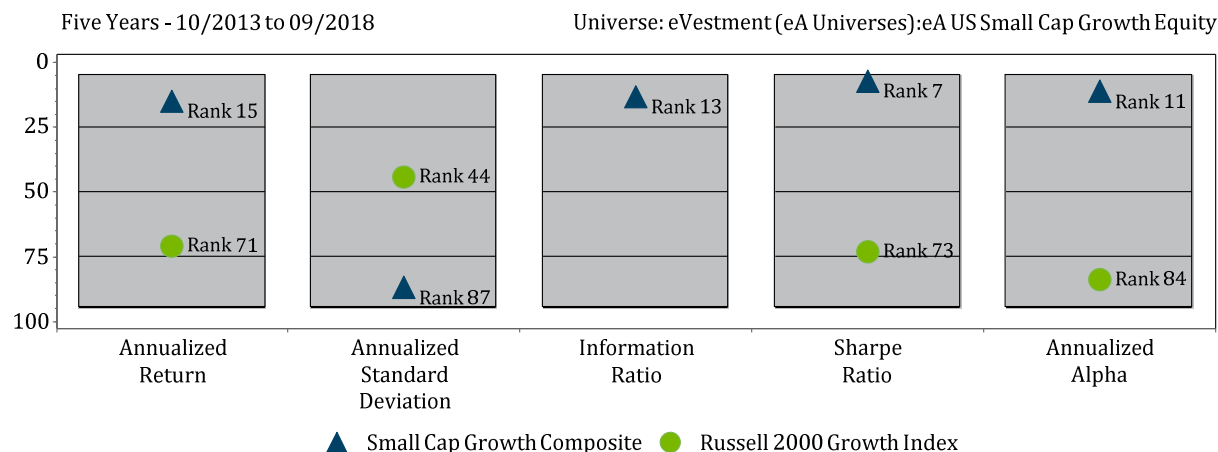
eA Universe Construction Methodology Small Cap Growth – U.S. Equity products that invest primarily in small capitalization stocks with fundamental characteristics showing high earnings growth expectations or in fast-growing economic sectors. The expected benchmarks for this universe would include the Russell 2000, S&P 600, or Russell 2000 Growth. Managers in this category will typically indicate a “Primary Capitalization Emphasis” equal to Small Cap and a “Primary Style Emphasis” equal to Growth. eVestment Alliance standard deviation reflects annualized calculation of quarterly returns.

**Past performance is not indicative of future returns.** Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair’s Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.



# Small Cap Growth Strategy

## Performance Statistics – Five Years (USD Gross)



|   | Annualized Return | Annualized Standard Deviation | Information Ratio | Sharpe Ratio | Annualized Alpha |
|---|-------------------|-------------------------------|-------------------|--------------|------------------|
| 5th Percentile                            | 18.65             | 16.95                         | 0.96              | 1.26         | 6.49             |
| 25th Percentile                           | 14.52             | 14.82                         | 0.52              | 1.05         | 3.59             |
| 50th Percentile                           | 13.30             | 13.83                         | 0.25              | 0.93         | 2.07             |
| 75th Percentile                           | 11.92             | 12.95                         | -0.04             | 0.81         | 0.47             |
| 95th Percentile                           | 9.10              | 11.85                         | -0.43             | 0.59         | -2.07            |
| <b>Small Cap Growth Composite (Gross)</b> | <b>15.84</b>      | <b>12.61</b>                  | <b>0.69</b>       | <b>1.22</b>  | <b>5.32</b>      |
| <b>Russell 2000 Growth Index</b>          | <b>12.14</b>      | <b>14.02</b>                  | <b>--</b>         | <b>0.83</b>  | <b>0.00</b>      |
| Number of Managers                        | 168               | 168                           | 168               | 168          | 168              |

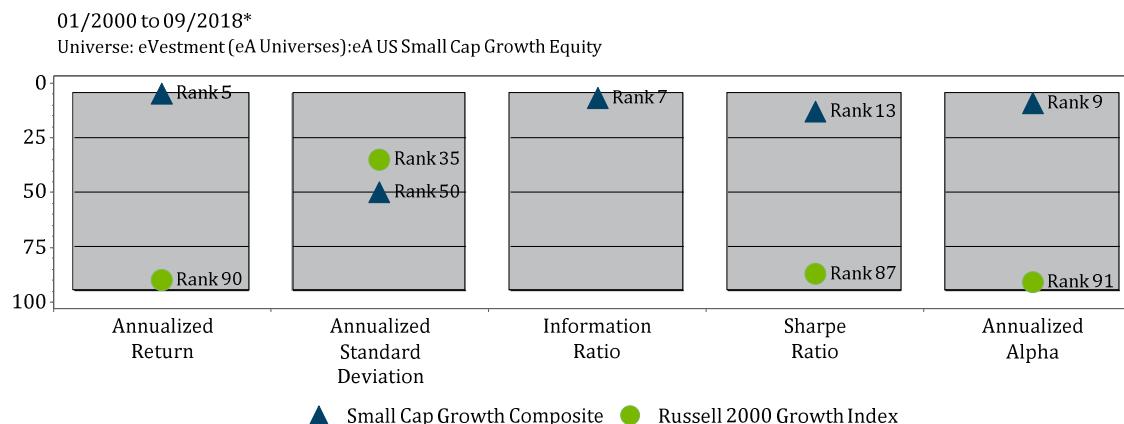
Composite inception January 1, 1989.

eA Universe Construction Methodology Small Cap Growth – U.S. Equity products that invest primarily in small capitalization stocks with fundamental characteristics showing high earnings growth expectations or in fast-growing economic sectors. The expected benchmarks for this universe would include the Russell 2000, S&P 600, or Russell 2000 Growth. Managers in this category will typically indicate a “Primary Capitalization Emphasis” equal to Small Cap and a “Primary Style Emphasis” equal to Growth. eVestment Alliance standard deviation reflects annualized calculation of quarterly returns.

**Past performance is not indicative of future returns.** Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair’s Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.

# Small Cap Growth Strategy

## Performance Statistics – Since January 1, 2000<sup>1</sup> (USD Gross)



|   | Annualized Return | Annualized Standard Deviation | Information Ratio | Sharpe Ratio | Annualized Alpha |
|---|-------------------|-------------------------------|-------------------|--------------|------------------|
| 5th Percentile                            | 12.75             | 26.68                         | 0.80              | 0.58         | 7.42             |
| 25th Percentile                           | 10.71             | 22.56                         | 0.61              | 0.48         | 5.49             |
| 50th Percentile                           | 8.95              | 20.51                         | 0.42              | 0.36         | 3.66             |
| 75th Percentile                           | 7.31              | 19.33                         | 0.16              | 0.25         | 1.54             |
| 95th Percentile                           | 5.14              | 17.42                         | -0.08             | 0.14         | -0.52            |
| <b>Small Cap Growth Composite (Gross)</b> | <b>12.19</b>      | <b>20.51</b>                  | <b>0.75</b>       | <b>0.51</b>  | <b>6.80</b>      |
| <b>Russell 2000 Growth Index</b>          | <b>5.92</b>       | <b>21.82</b>                  | <b>--</b>         | <b>0.20</b>  | <b>0.00</b>      |
| Number of Managers                        | 74                | 74                            | 74                | 74           | 74               |

<sup>1</sup>Reflects the inception of the strategy's current management style. At this time, changes were made to the portfolio management team and the way the philosophy was implemented. Actual composite inception precedes this date. This information is supplemental to the composite disclosure slide located in the appendix.

eVestment Alliance standard deviation reflects annualized calculation of monthly returns. eA Universe Construction Methodology Small Cap Growth – U.S. Equity products that invest primarily in small capitalization stocks with fundamental characteristics showing high earnings growth expectations or in fast-growing economic sectors. The expected benchmarks for this universe would include the Russell 2000, S&P 600, or Russell 2000 Growth. Managers in this category will typically indicate a "Primary Capitalization Emphasis" equal to Small Cap and a "Primary Style Emphasis" equal to Growth. eVestment Alliance standard deviation reflects annualized calculation of quarterly returns.

**Past performance is not indicative of future returns.** Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair's Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.

# Why William Blair Small Cap Growth?

Our objective is to provide strong investment performance for our clients due to:

- An independent, privately held firm which allows us to focus on investment performance
- Experienced and long-tenured team
- Proven investment philosophy
- Rigorous investment process

# Appendix

# Holdings: Small Cap Growth

October 31, 2018

|                               | Portfolio Weight | Benchmark Weight |                               | Portfolio Weight | Benchmark Weight |                                | Portfolio Weight | Benchmark Weight |
|-------------------------------|------------------|------------------|-------------------------------|------------------|------------------|--------------------------------|------------------|------------------|
| <b>COMMUNICATION SERVICES</b> | <b>3.73</b>      | <b>3.60</b>      | <b>FINANCIALS (continued)</b> |                  |                  | <b>INDUSTRIALS (continued)</b> |                  |                  |
| Cable One Inc                 | 1.48             | 0.00             | Home Bancshares Inc           | 1.07             | 0.07             | Genesee & Wyoming Inc-Cl A     | 1.02             | 0.00             |
| Orbcomm Inc                   | 1.34             | 0.07             | Meta Financial Group Inc      | 1.03             | 0.07             | Willdan Group Inc              | 0.95             | 0.02             |
| Cars.Com Inc                  | 0.91             | 0.00             | Glacier Bancorp Inc           | 0.99             | 0.05             | Siteone Landscape Supply Inc   | 0.82             | 0.27             |
| <b>CONSUMER DISCRETIONARY</b> | <b>18.00</b>     | <b>15.03</b>     | Triumph Bancorp Inc           | 0.86             | 0.08             | Mercury Systems Inc            | 0.67             | 0.11             |
| Adtalem Global Education Inc  | 1.73             | 0.00             | Lendingtree Inc               | 0.66             | 0.16             | Bluelinx Holdings Inc          | 0.28             | 0.02             |
| Boot Barn Holdings Inc        | 1.48             | 0.07             | <b>HEALTH CARE</b>            | <b>16.36</b>     | <b>26.45</b>     | <b>INFORMATION TECHNOLOGY</b>  | <b>20.99</b>     | <b>17.18</b>     |
| Dave & Buster's Entertainmen  | 1.32             | 0.23             | Horizon Pharma PLC            | 1.94             | 0.30             | J2 Global Inc                  | 1.53             | 0.33             |
| Gentherm Inc                  | 1.32             | 0.00             | Encompass Health Corp         | 1.61             | 0.00             | Agilysys Inc                   | 1.52             | 0.01             |
| Laureate Education Inc-A      | 1.25             | 0.00             | Cambrex Corp                  | 1.60             | 0.07             | Varonis Systems Inc            | 1.46             | 0.17             |
| Grand Canyon Education Inc    | 1.24             | 0.00             | Ligand Pharmaceuticals        | 1.57             | 0.34             | Liveperson Inc                 | 1.29             | 0.13             |
| Six Flags Entertainment Corp  | 1.13             | 0.00             | Catalent Inc                  | 1.31             | 0.00             | Pure Storage Inc - Class A     | 1.28             | 0.00             |
| Lithia Motors Inc-Cl A        | 1.06             | 0.12             | Glaukos Corp                  | 1.22             | 0.19             | Euronet Worldwide Inc          | 1.27             | 0.00             |
| Weight Watchers Intl Inc      | 1.05             | 0.24             | Hanger Inc                    | 1.13             | 0.00             | Maxlinear Inc                  | 1.19             | 0.12             |
| Nutrisystem Inc               | 1.01             | 0.10             | Lhc Group Inc                 | 1.03             | 0.26             | Guidewire Software Inc         | 1.17             | 0.00             |
| Hilton Grand Vacations Inc    | 0.97             | 0.00             | Codexis Inc                   | 1.01             | 0.08             | Epam Systems Inc               | 1.16             | 0.00             |
| Dine Brands Global Inc        | 0.84             | 0.08             | Cryolife Inc                  | 1.01             | 0.07             | Nuance Communications Inc      | 1.16             | 0.00             |
| Etsy Inc                      | 0.82             | 0.50             | Simulations Plus Inc          | 0.78             | 0.02             | Wns Holdings Ltd-Adr           | 1.12             | 0.00             |
| Universal Electronics Inc     | 0.76             | 0.00             | Intersect Ent Inc             | 0.70             | 0.08             | Nice Ltd - Spon Adr            | 1.09             | 0.00             |
| Golden Entertainment Inc      | 0.74             | 0.03             | Penumbra Inc                  | 0.54             | 0.00             | Rogers Corp                    | 0.99             | 0.12             |
| Lci Industries                | 0.70             | 0.17             | Repligen Corp                 | 0.53             | 0.21             | Realpage Inc                   | 0.98             | 0.00             |
| Aspen Group Inc               | 0.60             | 0.00             | Portola Pharmaceuticals Inc   | 0.39             | 0.12             | Solarwinds Corp                | 0.97             | 0.00             |
| <b>CONSUMER STAPLES</b>       | <b>3.29</b>      | <b>3.07</b>      | <b>INDUSTRIALS</b>            | <b>19.47</b>     | <b>18.03</b>     | Littelfuse Inc                 | 0.87             | 0.00             |
| Primo Water Corp              | 1.38             | 0.05             | Healthcare Services Group     | 1.62             | 0.29             | Greensky Inc-Class A           | 0.80             | 0.00             |
| Calavo Growers Inc            | 0.96             | 0.15             | John Bean Technologies Corp   | 1.54             | 0.32             | Carbon Black Inc               | 0.63             | 0.01             |
| Nu Skin Enterprises Inc - A   | 0.95             | 0.00             | Bwx Technologies Inc          | 1.50             | 0.00             | Novanta Inc                    | 0.49             | 0.19             |
| <b>ENERGY</b>                 | <b>2.99</b>      | <b>2.19</b>      | Brink's Co/The                | 1.43             | 0.33             | <b>MATERIALS</b>               | <b>0.81</b>      | <b>3.79</b>      |
| Centennial Resource Develo-A  | 0.95             | 0.00             | Blue Bird Corp                | 1.31             | 0.01             | Orion Engineered Carbons SA    | 0.81             | 0.00             |
| Cameco Corp                   | 0.94             | 0.00             | Casella Waste Systems Inc-A   | 1.31             | 0.02             | <b>REAL ESTATE</b>             | <b>2.90</b>      | <b>2.74</b>      |
| Callon Petroleum Co           | 0.63             | 0.00             | Douglas Dynamics Inc          | 1.26             | 0.09             | Colliers International Group   | 1.02             | 0.00             |
| Carrizo Oil & Gas Inc         | 0.47             | 0.16             | Ritchie Bros Auctioneers      | 1.23             | 0.00             | Firstservice Corp              | 1.01             | 0.00             |
| <b>FINANCIALS</b>             | <b>8.42</b>      | <b>7.47</b>      | Albany Intl Corp-Cl A         | 1.19             | 0.20             | Coresite Realty Corp           | 0.87             | 0.00             |
| Virtu Financial Inc-Class A   | 1.37             | 0.00             | Luxfer Holdings PLC           | 1.15             | 0.00             | <b>Cash</b>                    | <b>3.04</b>      | <b>0.00</b>      |
| Firstcash Inc                 | 1.32             | 0.34             | Armstrong World Industries    | 1.12             | 0.00             | <b>Total</b>                   | <b>100.00</b>    | <b>100.00</b>    |
| Encore Capital Group Inc      | 1.10             | 0.00             | Esco Technologies Inc         | 1.07             | 0.00             |                                |                  |                  |

The data shown above is based on the strategy's representative portfolio. Holdings include cash. Individual securities listed in this report are for informational purposes only. Holdings are subject to change at any time. This information does not constitute, and should not be construed as, investment advice or recommendations with respect to the securities listed. Name change from Telecommunication Services to Communication Services effective after close of business on 9/28/18; industry and subindustry reclassifications effective 10/1/18.

# Small Cap Growth Fee Schedule – Alameda County Employees’ Retirement Association (ACERA)

## **Separate Account Annual Investment Management Fee**

| <b>Account Size</b> | <b>Small Cap Growth</b> |
|---------------------|-------------------------|
| First \$10 million  | 1.00%                   |
| Next \$20 million   | 0.95%                   |
| Next \$20 million   | 0.90%                   |
| Next \$50 million   | 0.85%                   |
| Over \$100 million  | 0.80%                   |

Investment management fee for a \$120mm mandate based on the standard fee schedule: 0.88%

Investment management fee for a \$120mm mandate applying a 10% discount for ACERA: 0.79%

All fees shown are annual, payable quarterly in arrears, based on the appraised total market value of the account(s) including accrued interest and dividends but excluding the current anticipated balance invested with any other William Blair strategy. Fee schedule effective June 2005.

# Investing in Our Communities

Deep philanthropic commitments across the globe

*We are committed to serving our neighbors and being a long-term partner to the communities where we live and work.*

*We also support our employees' philanthropic initiatives by matching their personal financial contributions and providing support for those that serve on charitable boards.*



Civic



Cultural



Music Institute of Chicago's ArtsLink program.



Education



Health



Bunker Labs



Whole Kids Foundation



Midtown Educational Foundation



Hands On London



Anne Frank Education Center in Frankfurt

# Biographies – Small Cap Growth Team

## **Michael P. Balkin, Partner**

Michael Balkin is a portfolio manager on William Blair's Small Cap Growth strategy. He rejoined William Blair in 2008 after three years as a portfolio manager and chief investment officer of Magnetar Investment Management. He originally joined William Blair in 1990, covering small-cap growth companies for the firm's sell-side institutional research sales group, and became a portfolio manager on William Blair's Small Cap Growth strategy in 1999. Michael received a B.A. from Northwestern University.

## **Ward D. Sexton, CFA, Partner**

Ward Sexton is a portfolio manager on William Blair's Small Cap Growth and Small-Mid Cap Core strategies. Previously, he was an associate portfolio manager on William Blair's Small Cap Growth strategy and a research analyst. He joined the team in 2001 and covered resource, financial, and consumer companies during his time as an analyst. He joined William Blair in 1999, initially working in the firm's corporate finance group for two years. Ward is a member of the CFA Institute and the CFA Society of Chicago. He received a B.S. in finance, with honors, from the University of Illinois Urbana-Champaign and an M.B.A., with high honors, from the University of Chicago's Booth School of Business.

## **Mark C. Thompson, CFA, Partner**

Mark Thompson is a research analyst and small-cap growth associate portfolio manager at William Blair Investment Management. In this role, he focuses on U.S. small-cap stocks across sectors. Before joining the firm as a research analyst in 2006, he was a research generalist at Kidron Capital for three years. Before that, he was a research analyst covering healthcare at American Express for two years. Mark is a member of the CFA Institute and the CFA Society of Chicago. He received a B.B.A. in finance (with an emphasis on accounting) and an M.B.A. (with an emphasis on finance) from the University of Iowa.

## **Matt McLaughlin, CFA, CAIA**

Matt McLaughlin is a portfolio specialist for William Blair's U.S. growth equity strategies. Before joining the firm in 2016, he was vice president, research with Harbor Capital Advisors. Matt is a member of the CFA Institute, the CFA Society of Chicago, and the CAIA Association. He received a B.A. in finance and marketing from Loras College.

## **Tara Patock, CFA**

Tara Patock is a portfolio specialist for William Blair's U.S. growth equity strategies. Before joining the firm in 2013, she was a consultant with Pavilion Advisory Group. Before joining Pavilion, she was a registered sales associate with Oppenheimer & Co. Tara is a member of the CFA Institute and the CFA Society of Chicago. She received a B.B.A., summa cum laude, in economics and finance from Loyola University Chicago and an M.B.A., with honors, from the University of Chicago's Booth School of Business.

## **Patrick Quinn, CFA, Partner**

Patrick Quinn is the head of U.S. equities for William Blair Investment Management and a portfolio specialist for the firm's U.S. equity growth strategies. He is also a member of the leadership team for William Blair Investment Management and sits on the firm's extended leadership group. Before joining William Blair in 2004 to work with the firm's domestic equity growth teams, Patrick was an institutional equity trader with Strong Capital Management. He is a member of the CFA Institute and the CFA Society of Chicago. Patrick received a B.S. in accounting and finance from Indiana University and an M.B.A., with honors, from the University of Chicago's Booth School of Business.



# Biographies – U.S. Equity Research Team

## **Nancy Aversa, CFA**

Nancy Aversa is a research analyst at William Blair Investment Management. She focuses on U.S. large-cap consumer companies. Before joining William Blair in 2015, Nancy worked in the research department and on the portfolio teams of Federated Investors for 10 years. During her time at Federated, Nancy covered a broad range of domestic consumer cyclical and consumer staples equities for both long-only and short-only portfolio strategies. Before that, she was a consumer research analyst with Victory Capital Management. Nancy started her career in investment banking with McDonald Investments. She is a member of the CFA Institute and the CFA Society of Chicago. Nancy received a B.Com. from the University of Windsor and an M.B.A. from the University of Windsor.

## **Henry Baby, CFA**

Henry Baby is a domestic small-cap generalist research analyst at William Blair Investment Management. He joined William Blair in December 2014 after running his own firm, Six Corners Capital, for more than five years. Previously, Henry was an equity analyst at RMB Capital Management and Holland Capital Management in Chicago. He is a member of the CFA Institute and the CFA Society of Chicago. Henry received a B.S. in finance from Boston College and an M.B.A. from the University of Chicago's Booth School of Business.

## **Travis Cope**

Travis Cope is a research analyst with William Blair Investment Management. He focuses on U.S. midcap healthcare companies. He joined William Blair in 2008 as a research associate working primarily with the U.S. growth team, where he was generalist analyst covering emerging market small-cap companies and non-U.S. small-cap resources companies. Before joining the firm, he was an analyst at Macquarie Bank in Chicago, where he engaged in corporate restructuring advisory activity. Travis received an M.A. in international relations and modern history from the University of St. Andrews in Scotland.

## **James S. Golan, CFA, Partner**

Jim Golan is a portfolio manager on William Blair's Large Cap Growth strategy and a research analyst covering U.S. large-cap technology stocks. From 2000 until 2005, when he assumed his current role, Jim was a research analyst focusing on financial, technology, industrial, and resource stocks. Before joining William Blair in 2000, he worked at Citigroup Global Asset Management, where he was a global research team leader for the telecommunications sector and a key member of the team that devised valuation metrics for standardizing the analysis of domestic and international companies. Jim began his career at Kemper Financial as a research analyst covering telecommunications, technology, energy, industrial, food, and beverage companies. He is a member of the CFA Institute and the CFA Society of Chicago. Jim received a B.A. in economics from DePauw University and an M.B.A. in finance from Northwestern University's Kellogg Graduate School of Management.

## **Jim Jones, CFA, Partner**

Jim Jones is a research analyst and a co-director of research for the U.S. Growth Equity team at William Blair Investment Management. He focuses on U.S. small-cap industrials. Before joining William Blair in 2010, Jim was an investment analyst at Federated Investors for four years. Before that, he was a research analyst at Credit Suisse and an associate at Ashton Partners. He is a member of the CFA Institute and the CFA Society of Chicago. Jim received a B.S. in accounting from Miami University and an M.B.A. from the University of North Carolina.

## **Yan Krasov, CFA**

Yan Krasov is a research analyst at William Blair Investment Management. He focuses on U.S. large-cap industrials and healthcare companies. Before joining William Blair in September 2006, Yan spent four years at JPMorgan Securities in Chicago, where he began his career in the firm's institutional equity sales and private client services groups. He is a member of the CFA Institute and the CFA Society of Chicago. Yan received a B.S. in speech and economics from Northwestern University and an M.B.A. from the University of Chicago's Booth School of Business.

# Biographies – U.S. Equity Research Team

## **Mark Lane, Partner**

Mark Lane is a research analyst with William Blair Investment Management. He focuses on U.S. large, mid and small cap financials. From June 2013 to June 2017, Mark also served as the director of research for William Blair's U.S. growth equity strategies. Before that, he was a financials sector analyst with William Blair's sell-side research department, where he specialized in asset management, brokerage, exchanges, and investment banking. Before joining William Blair in 1998, Mark worked as a senior underwriter for The St. Paul Companies, where he analyzed specialty property-casualty insurance risks, and Goldman Sachs, where he worked as an analyst in the Chicago high-net-worth money-management group. Mark received a B.A. in economics from Northwestern University and an M.B.A. from the University of Chicago's Booth School of Business.

## **Michael Lasota, CFA**

Michael Lasota is a research analyst on William Blair Investment Management's consumer sector team, where he focuses on U.S. small-cap companies. Before joining the firm as a research analyst in April 2014, Michael was an investment analyst at T. Rowe Price for nearly six years, where he covered hotel, cruise, and real estate companies. Before that, he was an associate at Boston Consulting Group for two years. Michael is a member of the CFA Institute. He received a B.A. in economics from the University of Chicago and an M.B.A. from the University of Chicago's Booth School of Business.

## **Chris Sweeney, CFA**

Chris Sweeney is a research analyst at William Blair Investment Management. In this role, he focuses on U.S. large-cap resources companies and select industries within U.S. large-cap technology. Before joining William Blair as a research associate in June 2014, Chris was an economic content specialist at FactSet Research Systems. He is a member of the CFA Institute and CFA Society of Chicago. Chris received a B.A. in economics from Yale University and is currently pursuing an M.B.A. at the University of Chicago's Booth School of Business.

## **Lauren Thompson, CFA**

Lauren Thompson is a research analyst on the consumer sector team with William Blair Investment Management. In this role, she focuses on U.S. midcap companies. Before joining William Blair as a research associate in September 2014, Lauren was an equity research associate at Credit Suisse, first on the small-midcap strategy team and later covering the broadband retail sector. She is a member of the CFA Institute and CFA Society of Chicago. Lauren received a B.S. in mathematics and economics from the University of Notre Dame.

## **Mark C. Thompson, CFA, Partner**

Mark Thompson is a research analyst and small-cap growth associate portfolio manager at William Blair Investment Management. In this role, he focuses on U.S. small-cap stocks across sectors. Before joining the firm as a research analyst in 2006, he was a research generalist at Kidron Capital for three years. Before that, he was a research analyst covering healthcare at American Express for two years. Mark is a member of the CFA Institute and the CFA Society of Chicago. He received a B.B.A. in finance (with an emphasis on accounting) and an M.B.A. (with an emphasis on finance) from the University of Iowa.

## **Corey S. Tobin, Partner**

Corey Tobin is a research analyst and a co-director of research for the U.S. Growth Equity team at William Blair Investment Management. He focuses on U.S. small-cap technology companies. Before rejoining William Blair in 2012, Corey was the senior vice president of healthcare solutions and corporate planning for Trustwave Holdings, Inc., a provider of data security and compliance solutions. In this role, he led Trustwave's administrative and planning functions, such as its financial planning and analysis, human resources, sales operations, facilities, investor relations, and special projects areas. From 2001 through 2011, Corey served in William Blair's sell-side research group, focusing on specialty software and healthcare IT companies; in this role he was recognized by the Wall Street Journal, the Financial Times, and Forbes. Before joining William Blair, Corey was an associate at private-equity firm Willis Stein & Partners, an analyst in the M&A investment banking group of Merrill Lynch, and an associate in the financial advisory services practice at Coopers & Lybrand (now PricewaterhouseCoopers). He received a B.S. in business administration with high distinction from the University of Michigan, an M.B.A. from Northwestern University's Kellogg Graduate School of Management, and an M.S. in computer science with recognition from the University of Chicago.

## **Kurt M. Wiese, CFA, CPA, Partner**

Kurt Wiese is a research analyst for William Blair Investment Management. He focuses on U.S. small-cap healthcare companies. Before joining the research team in 2001, he was a member of William Blair's corporate finance healthcare team, where he was engaged in all aspects of transaction execution. Before joining William Blair in 2000, Kurt worked in the Chicago audit practice of PricewaterhouseCoopers for two years. Kurt is actively involved in the Chicago community through his philanthropic work at the Chicago Jesuit Academy, a full-scholarship, college-prep middle school for underprivileged boys on Chicago's West Side. Kurt received a B.S. in accounting and finance from Indiana University and an M.B.A. from the University of Chicago's Booth School of Business. He was also a participant at the Center for Japanese Language and Culture at Nanzan University in Nagoya, Japan.

# Biographies – U.S. Equity Research Team

## **Colin Williams, CFA, Partner**

Colin Williams is a research analyst at William Blair Investment Management. He works on the technology sector team and focuses on U.S. midcap companies. Colin joined William Blair in 2000 as a sell-side research associate and moved to Investment Management in 2002. In 2006, he began co-managing William Blair's Small Cap Growth strategy. In 2008, he resumed his research responsibilities at his request. Previously, Colin held several financial positions of increasing responsibility at Allegiance Healthcare, a division of Cardinal Health. He is a member of the CFA Institute and the CFA Society of Chicago. Colin received a B.A. in economics from Grove City College.

## **Nick Zimmerman, CFA**

Nick Zimmerman is a research analyst at William Blair Investment Management. In this role, he focuses on U.S. small- and midcap resources and midcap industrials companies. Before joining William Blair in 2017, Nick was an equity analyst at Holland Capital Management, where he covered energy, materials, aerospace and defense, and transportation companies. He is a member of the CFA Institute and the CFA Society of Chicago. Nick received a B.S. in finance, with high honors, from the University of Illinois Urbana-Champaign and an M.S. in finance from the University of Wisconsin-Madison.

# Biography

## **Stephanie G. Braming, CFA, Partner**

Stephanie Braming is the global head of William Blair Investment Management. She is also chairman of the board of trustees and president of the William Blair Funds, chairman of the William Blair SICAV, and serves on the firm's executive committee. She is responsible for leading and setting the strategic direction for Investment Management, including broadening, deepening, and evolving the firm's investment capabilities. She also chairs the leadership team for Investment Management and serves on the firm's global inclusion council. Before assuming leadership of William Blair Investment Management in 2017, Stephanie was a portfolio manager for the International Growth and International Small Cap Growth strategies. Joining the firm in 2004, she was instrumental in portfolio construction and portfolio design and had a leadership role in the enhancement of the firm's systematic research tools. Stephanie also served as portfolio manager for the Japan strategy from inception in 2013 to close in 2015. Before joining the firm, she was a principal at Mercer Investment Consulting, where she was responsible for the strategic investment direction of her institutional clients. She also previously worked at the Federal Reserve Bank of Chicago. She is a member of the CFA Institute and the CFA Society of Chicago, where she served on the society's board of directors. She also serves on the board of Working in the Schools (WITS), the largest literacy organization serving Chicago Public School students. Stephanie received a B.A. from DePauw University and an M.B.A. from the University of Chicago's Booth School of Business.

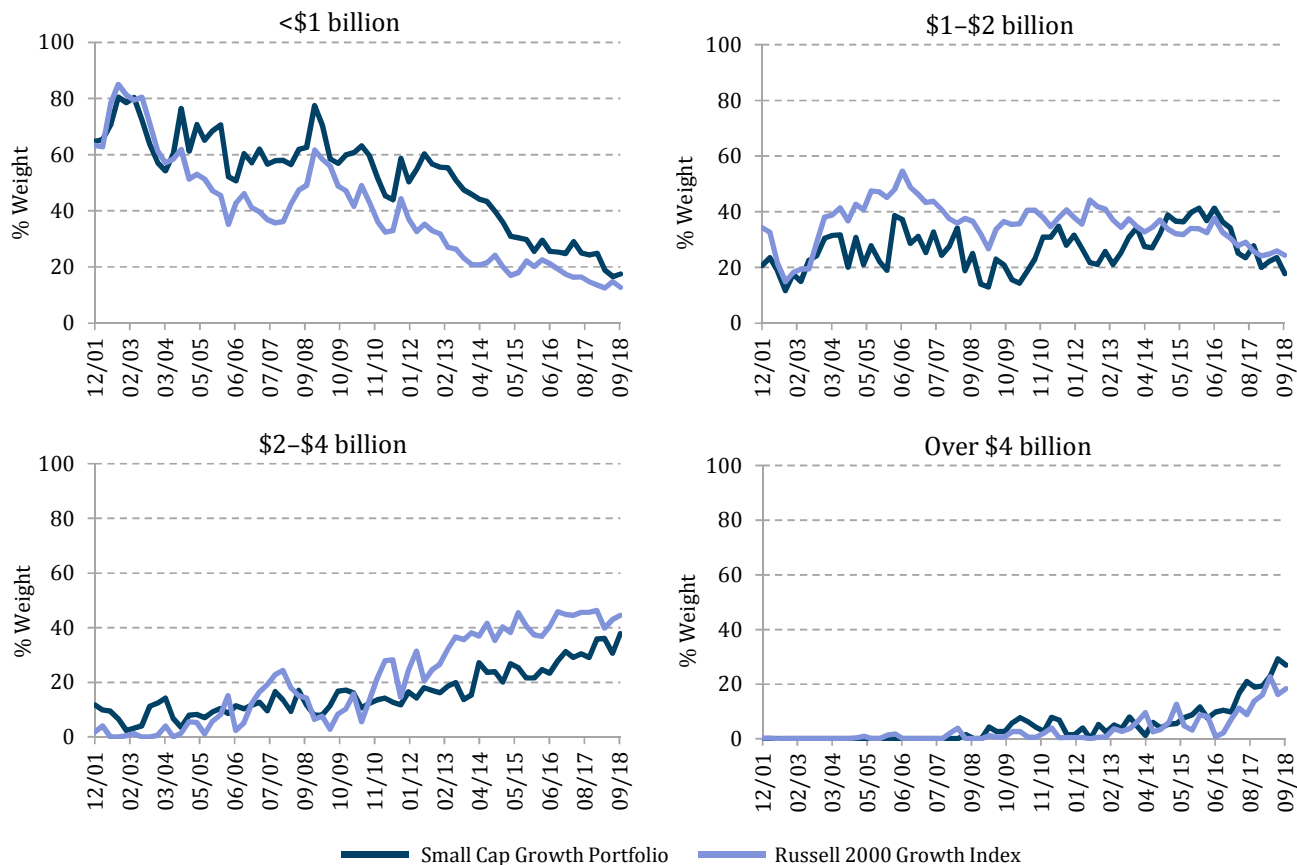
# Biography

## **Wally Fikri, CFA, CPA, Partner**

Wally Fikri is responsible for consultant relations and business development for William Blair Investment Management. He covers the Western region of the United States. Wally joined William Blair in 2004 after nearly 12 years with Brinson Partners (now UBS Global Asset Management). He has been actively involved in the institutional asset-management industry, including extensive work with asset-allocation, equity, fixed-income, and hedge-fund strategies, since beginning his career in the financial services practice at KPMG Peat Marwick in 1991. He is an active member and past board member of the CFA Society of Chicago, a member of the CFA Institute, and a member of the advisory board for Goldie's Place, a charitable organization helping homeless adults become self-sufficient. Wally received a B.S. in accountancy from Northern Illinois University and an M.B.A. from Northwestern University's Kellogg Graduate School of Management.

# Small Cap Growth Portfolio Capitalization Structure

September 30, 2018



|                                   | Small Cap Growth | Russell 2000 Growth |
|-----------------------------------|------------------|---------------------|
| Weighted Average Market Cap (\$B) | \$3.1            | \$2.7               |
| Weighted Median Market Cap (\$B)  | \$2.9            | \$2.5               |

The data shown above is based on the strategy's representative portfolio. Calculated in Eagle.

# Glossary – Terms

**Active Share:** A measure of the percentage of stock holdings in a manager's portfolio that differ from the benchmark index.

**Alpha:** A measure of a portfolio's return in excess of the market return, after both have been adjusted for risk. It is a mathematical estimate of the amount of return expected from a portfolio above and beyond the market return at any point in time. For example, an alpha of 1.25 indicates that a stock is projected to rise 1.25% in price in a year over the return of the market, or the return when the market return is zero. When an investment price is low relative to its alpha, it is undervalued, and considered a good selection.

**Beta:** A quantitative measure of the volatility of the portfolio relative to the overall market, represented by a comparable benchmark. A beta above 1 is more volatile than the overall market, while a beta below 1 is less volatile, and could be expected to rise and fall more slowly than the market.

**Developed Markets:** Using the Morgan Stanley Capital International (MSCI) geographic definition, this region includes: United Kingdom, Europe (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Spain, Sweden and Switzerland), Japan, Pacific Asia (Australia, Hong Kong, New Zealand, and Singapore) and the Western Hemisphere (Canada and other Americas).

**Debt to Total Capital Ratio:** This figure is the percentage of each company's invested capital that consists of debt. Companies with a high Debt to Total Capital level may be considered more risky. From a portfolio perspective, the portfolio Debt to Total Capital Ratio is a weighted average of the individual holdings' Debt to Total Capital Ratio.

**Emerging Markets:** Using MSCI's geographic definition, this region includes: Emerging Markets Asia (China, India, Indonesia, Malaysia, S Korea, Taiwan, and Thailand), Emerging Markets Europe, Mid-East and Africa (Czech Republic, Hungary, Poland, Russia, Turkey, Egypt, Morocco, and S Africa), and Latin America (Argentina, Brazil, Chile, Columbia, Mexico, Peru and Venezuela).

**EPS (Earnings Per Share) Growth Rate (Projected):** This measure represents the weighted average of forecasted growth in earnings expected to be experienced by the stocks within the portfolio over the next year. From a portfolio perspective, the portfolio EPS Growth Rate is a weighted average of the individual holdings' EPS Growth Rate.

**EV/EBITDA (Enterprise Value/Earnings Before Interest, Taxes and Depreciation-Amortization):** The EV/EBITDA ratio is useful for global comparisons because it ignores the distorting effects of individual countries' taxation policies. It's used to find attractive takeover candidates. Enterprise value is a better measure than market cap for takeovers because it takes into account the debt which the acquirer will have to assume. Therefore, a company with a low EV/EBITDA ratio can be viewed as a good takeover candidate.

**EV/IC: (Enterprise Value/Invested Capital) Ratio:** Enterprise Value (EV), which is market capitalization minus cash plus debt divided by Invested Capital (IC), which is the sum of common stock, preferred stock and long-term debt. This number will get you a simple multiple. If it is below 1.0, then it means that the company is selling below book value and theoretically below its liquidation value.

**Information Ratio:** A measure of risk-adjusted return. The annualized excess return of the portfolio relative to a respective benchmark, divided by the annualized tracking error relative to that same benchmark. The higher the measure, the higher the risk-adjusted return.

**Integrated:** Constructs a portfolio of the top 20% of stocks based on William Blair's multi-factor composite model, which uses Earnings Trend, Momentum, Quality, and Valuation factors. The portfolio is rebalanced on a monthly basis and weights stocks based on relative market capitalization.

**PBVn (Price/Book Value) Ratio:** The PBV Ratio measures the value of a company's common stock relative to its shareholder's equity. A price-to-book multiple above one means that the price of the company's common stock is higher than its common shareholder's equity. A price-to-book multiple below one means that the price of the company's common stock are less than its break-up value, and the shares may be undervalued.

**PCF (Price/CashFlow):** Some analysts favor the price/cash flow over the price-earnings (PE) ratio as a measure of a company's value. Cash flow is a measure of a company's financial health. It equals cash receipts minus cash payments over a given period of time.

**P/E (Price/Earnings) Ratio:** This is the most common measure of how expensive a stock is. Simply, it is the cost an investor in a given stock must pay per dollar of current annual earnings. A high P/E generally indicates that the market is paying more to obtain the stock because it has confidence in the company's ability to increase its earnings. Conversely, a low P/E often indicates that the market has less confidence that the company's earnings will increase rapidly or steadily, and therefore will not pay as much for its stock.

**R-squared:** A measurement of how closely the portfolio's performance correlates with the performance of its benchmark, such as the MSC AC World Free ex US Index. In other words, it is a measurement of what portion of a portfolio's performance can be explained by the performance of the overall market or index. Ranges from 0 to 1, where 0 indicates no correlation and 1 indicates perfect correlation.

**Risk (Standard Deviation):** A measure of the portfolio's risk. A higher standard deviation represents a greater dispersion of returns, and thus a greater amount of risk. The annualized standard deviation is calculated using monthly returns.

**Silo:** Constructs portfolios using the top 20% of stocks based on each of the four sub-models used to construct William Blair's composite model, then averages the returns coming from each of the four portfolios. The portfolios are rebalanced on a monthly basis and weights stocks based on relative market capitalization. (The Equal Weighted strategy equally weights the returns coming from each of the sub-portfolios; the Optimized approach weights Quality 5%, Valuation 60%, Earnings Treng 5%, and Momentum 30%. The optimization was based on a monte-carlo simulation that sought an optimal weighting of each sub-portfolios to achieve the highest return).

**Sortino Ratio:** A modification of the Sharpe ratio that differentiates harmful volatility from general volatility by taking into account the standard deviation of negative asset returns, called downside deviation. The Sortino ratio subtracts the risk-free rate of return from the portfolio's return, and then divides that by the downside deviation. A large Sortino ratio indicates there is a low probability of a large loss.

**Sharpe-Ratio:** A risk-adjusted measure calculated using standard deviation and excess return (Portfolio return – Risk Free Rate) to determine reward per unit of risk. The higher the Sharpe ratio, the better the portfolio's historic risk-adjusted performance.

**Tracking Error:** Tracking Error measures the extent to which a portfolio tracks its benchmark. The tracking error of an index portfolio should be lower than that of an active portfolio. The tracking error will always be greater than zero if the portfolio is anything other than a replication of the benchmark.

**Trailing 1-Year Turnover:** This figure reflects the portfolio's trading activity by calculating the amount of the portfolio's holdings bought or sold over the prior year, expressed as a percentage of the portfolio's average market value. Turnover figures may be related to the amount of trading costs experienced by the portfolio.

**Weighted Average Market Capitalization:** Market capitalization refers to the total market value of each company's outstanding shares. The Weighted Average Market Capitalization for a portfolio is calculated as the average market capitalization of the stocks within the portfolio, weighted by the amount of each stock owned.

**Weighted Median Market Capitalization:** This calculation represents the median market capitalization of the stocks in the portfolio, weighted by the amount of each stock owned.

# Glossary – Indices

**Bloomberg Barclays U.S. Aggregate Bond Index:** A broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, mortgage-backed securities (agency fixed-rate and hybrid ARM pass-throughs), asset-backed securities and commercial mortgage backed securities.

**Bloomberg Barclays Intermediate Govt./Credit Bond Index (formerly the Lehman Index):** A fixed-rate government and corporate bonds rated investment grade or higher.

**Bloomberg Barclay's Multiverse Index:** Provides a broad-based measure of the global fixed-income bond market. The index represents the union of the Global Aggregate Index and the Global High-Yield Index and captures investment grade and high yield securities in all eligible currencies. Standalone indices such as the Euro Floating-Rate ABS Index and the Chinese Aggregate Index are excluded. The Multiverse Index family includes a wide range of standard and customized sub-indices by sector, quality, maturity, and country.

**Bloomberg Barclays U.S. Intermediate Aggregate Bond Index:** A broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, mortgage-backed securities (agency fixed-rate and hybrid ARM pass-throughs), asset-backed securities and commercial mortgage backed securities with maturities between one and 10 years.

**ICE BofAML 1-Year U.S. Treasury Note Index:** An unmanaged index comprised of a single U.S. Treasury Bill issued at the beginning of each month and held for a full month. Each month the index is rebalanced and the issue selected is the outstanding U.S. Treasury Note that matures closest to, but not beyond one year from the rebalancing date.

**ICE BofAML 3-Month Treasury Bill Index:** An unmanaged market index of U.S. Treasury securities maturing in 90 days that assumes reinvestment of all income.

**J.P. Morgan Cash Index:** Measures the total return of a rolling investment in a notional fixed income instrument with a maturity of three months. The deposit rates used in the calculation of the JP Morgan Cash Index are LIBOR or similar local reference rates.

**Merrill Lynch 1-Year U.S. Treasury Note Index:** Comprised of a single U.S. Treasury Bill issued at the beginning of each month and held for a full month. Each month the index is rebalanced and the issue selected is the outstanding U.S. Treasury Note that matures closest to, but not beyond one year from the rebalancing date.

**Merrill Lynch 3-Month Treasury Bill Index:** An unmanaged index market index of U.S. Treasury securities maturing in 90 days that assumes reinvestment of all income.

**MSCI (Morgan Stanley Capital International):** MSCI indices are the most widely used benchmarks by global portfolio managers. MSCI offers international investors performance benchmarks for 51 national stock markets as well as regional, sector, industry group, and industry aggregations.

**MSCI China A Onshore Index:** A free-float weighted equity index, designed to measure performance of China A share securities listed on either the Shanghai or Shenzhen Stock Exchanges.

**MSCI All Country World ex-US EAFE Index:** An unmanaged index that includes developed and emerging markets outside the United States.

**MSCI All Country World ex-US Small Cap Index:** A free float-adjusted market capitalization index designed to measure global developed and emerging market small capitalization equity performance, excluding the U.S.

**MSCI EAFE Index:** A free float-adjusted market capitalization index which captures large and mid cap representation across Developed Markets countries around the world, excluding the U.S. and Canada.

**MSCI EAFE IMI Index:** A free float-adjusted market capitalization index which captures large, mid and small cap representation across Developed Markets countries around the world, excluding the U.S. and Canada.

**MSCI EAFE Growth Index:** A free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the U.S. & Canada.

**MSCI All Country World ex-US Index:** An unmanaged index that includes developed and emerging markets, excluding the U.S.

**MSCI All Country World ex-US Growth Index:** A free float-adjusted market capitalization index that is designed to provide a broad measure of equity-market performance throughout the world, excluding the U.S. It includes those MSCI All Country World ex-US securities with higher price-to-book ratios and higher forecasted growth rates.

**MSCI All Country World ex-US IMI Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets, excluding the U.S.

**MSCI All Country World IMI Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets.

**MSCI All Country World ex-US IMI Growth Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance in the global developed and emerging markets, excluding the U.S. It includes those MSCI All Country World ex-US IMI Index securities with higher price-to-book ratios and higher forecasted growth rates.

**MSCI World ex-US Growth Index:** A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets, excluding the U.S., with higher price-to-book ratios and higher forecasted growth rates.

**MSCI World ex-US Index:** A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets, excluding the U.S.

**MSCI Emerging Markets Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets.

**MSCI Emerging Markets IMI Index:** A free float-adjusted market capitalization index which captures large, mid and small cap equity market performance in the global emerging markets.

**MSCI Emerging Markets Small Cap Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance of small cap companies in emerging markets.

**MSCI Emerging Markets Large Cap Index:** A free float-adjusted market capitalization index that is designed to measure equity market performance of large cap companies in emerging markets.

**MSCI World ex-US Small Cap Index:** An unmanaged index that includes non-US developed markets.

**Russell 1000 Index:** Measures the performance of the 1000 largest companies in the Russell 3000 Index, which represents approximately 90% of the total market capitalization of the U.S. market.

**Russell 1000 Growth Index:** Measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 1000 Value Index:** Measures the performance of the large cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

**Russell 2000 Index:** Measures the performance of the 2000 smallest companies in the Russell 3000 index, which represents approximately 8% of the total market capitalization of the Russell 3000 index.

**Russell 2000 Growth Index:** Measures the performance of those Russell 2000 companies with higher price-to book ratios and higher forecasted growth values.

**Russell 2000 Value Index:** Measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

**Russell 2500 Index:** Measures the performance of the 2500 smallest companies in the Russell 3000 Index.

**Russell 2500 Growth Index:** Measures the performance of those Russell 2500 companies with higher price-to book ratios and higher forecasted growth values.

**Russell 2500 Value Index:** Measures the performance of those Russell 2500 companies with lower price-to book ratios and lower forecasted growth values.

**Russell 3000 Index:** Measures the performance of the 3000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market.

**Russell 3000 Growth Index:** Measures the performance of those Russell 3000 companies with higher price-to-book ratios and higher forecasted growth values.

**Russell Midcap Index:** Measures the performance of the 800 smallest companies in the Russell 1000 Index, which represent approximately 27% of the total market capitalization of the Russell 1000 companies.

**Russell Midcap Growth Index:** Measures the performance of those Russell Midcap companies with higher price-to-book ratios and higher forecasted growth values.

**Russell Midcap Value Index:** Measures the performance of the mid-cap value segment of the U.S. equity universe. It includes those Russell Midcap Index companies with lower price-to-book ratios and lower forecasted growth values.

**S&P 500 Index:** The Standard & Poor's 500 Index (S&P 500) is an index of 500 stocks chosen for market size, liquidity and industry grouping, among other factors. The S&P 500 is designed to be a leading indicator of U.S. equities and is meant to reflect the risk/return characteristics of the large cap universe. Companies included in the index are selected by the S&P Index Committee, a team of analysts and economists at Standard & Poor's. The S&P 500 is a market value weighted index—each stock's weight is proportionate to its market value.

A direct investment in an unmanaged index is not possible.



# Small Cap Growth Strategy Performance

## Small Cap Growth Composite vs. Russell 2000 Growth Index Quarterly and Annual Returns<sup>1</sup> (%)

|             | Composite<br>(USD Gross) | Index         | Relative<br>Performance |             | Composite<br>(USD Gross) | Index         | Relative<br>Performance |             | Composite<br>(USD Gross) | Index        | Relative<br>Performance |             | Composite<br>(USD Gross) | Index        | Relative<br>Performance |
|-------------|--------------------------|---------------|-------------------------|-------------|--------------------------|---------------|-------------------------|-------------|--------------------------|--------------|-------------------------|-------------|--------------------------|--------------|-------------------------|
| Q1          | 8.37                     | 9.28          | -0.91                   | Q1          | 12.59                    | 14.36         | -1.77                   | Q1          | 15.05                    | 13.28        | 1.77                    | Q1          | 5.49                     | 2.30         | 3.19                    |
| Q2          | -4.71                    | -7.37         | 2.67                    | Q2          | -5.14                    | -7.25         | 2.11                    | Q2          | -4.39                    | -3.94        | -0.45                   | Q2          | 10.23                    | 7.23         | 3.00                    |
| Q3          | -0.75                    | -3.97         | 3.23                    | Q3          | 1.09                     | -1.76         | 2.84                    | Q3          | 8.25                     | 4.84         | 3.42                    | Q3          | 6.15                     | 5.52         | 0.62                    |
| Q4          | -9.70                    | -20.20        | 10.50                   | Q4          | 7.35                     | 8.77          | -1.42                   | Q4          | 0.67                     | 0.45         | 0.22                    | Q4          |                          |              |                         |
| <b>2000</b> | <b>-7.44</b>             | <b>-22.43</b> | <b>14.99</b>            | <b>2006</b> | <b>15.91</b>             | <b>13.35</b>  | <b>2.56</b>             | <b>2012</b> | <b>19.88</b>             | <b>14.59</b> | <b>5.29</b>             | <b>2018</b> | <b>23.42</b>             | <b>15.76</b> | <b>7.67</b>             |
| Q1          | -6.22                    | -15.20        | 8.98                    | Q1          | 2.50                     | 2.48          | 0.02                    | Q1          | 16.70                    | 13.21        | 3.49                    |             |                          |              |                         |
| Q2          | 30.34                    | 17.97         | 12.36                   | Q2          | 7.15                     | 6.69          | 0.47                    | Q2          | 6.76                     | 3.74         | 3.02                    |             |                          |              |                         |
| Q3          | -17.74                   | -28.08        | 10.34                   | Q3          | -1.79                    | 0.02          | -1.81                   | Q3          | 15.21                    | 12.80        | 2.41                    |             |                          |              |                         |
| Q4          | 29.98                    | 26.17         | 3.81                    | Q4          | -8.07                    | -2.10         | -5.96                   | Q4          | 7.77                     | 8.17         | -0.40                   |             |                          |              |                         |
| <b>2001</b> | <b>30.68</b>             | <b>-9.23</b>  | <b>39.90</b>            | <b>2007</b> | <b>-0.84</b>             | <b>7.05</b>   | <b>-7.89</b>            | <b>2013</b> | <b>54.69</b>             | <b>43.30</b> | <b>11.39</b>            |             |                          |              |                         |
| Q1          | -1.10                    | -1.96         | 0.86                    | Q1          | -14.59                   | -12.83        | -1.76                   | Q1          | 1.80                     | 0.48         | 1.32                    |             |                          |              |                         |
| Q2          | -3.47                    | -15.70        | 12.23                   | Q2          | -1.53                    | 4.47          | -6.00                   | Q2          | 0.07                     | 1.72         | -1.65                   |             |                          |              |                         |
| Q3          | -21.50                   | -21.52        | 0.02                    | Q3          | -9.01                    | -6.99         | -2.03                   | Q3          | -5.72                    | -6.13        | 0.41                    |             |                          |              |                         |
| Q4          | 9.97                     | 7.51          | 2.46                    | Q4          | -30.01                   | -27.45        | -2.56                   | Q4          | 8.32                     | 10.06        | -1.74                   |             |                          |              |                         |
| <b>2002</b> | <b>-17.58</b>            | <b>-30.26</b> | <b>12.68</b>            | <b>2008</b> | <b>-46.44</b>            | <b>-38.54</b> | <b>-7.90</b>            | <b>2014</b> | <b>4.04</b>              | <b>5.60</b>  | <b>-1.57</b>            |             |                          |              |                         |
| Q1          | -3.91                    | -3.88         | -0.04                   | Q1          | 1.91                     | -9.74         | 11.65                   | Q1          | 4.14                     | 6.63         | -2.49                   |             |                          |              |                         |
| Q2          | 31.25                    | 24.15         | 7.10                    | Q2          | 37.40                    | 23.38         | 14.03                   | Q2          | -0.08                    | 1.98         | -2.06                   |             |                          |              |                         |
| Q3          | 12.96                    | 10.47         | 2.49                    | Q3          | 19.42                    | 15.95         | 3.47                    | Q3          | -11.21                   | -13.06       | 1.85                    |             |                          |              |                         |
| Q4          | 15.92                    | 12.68         | 3.24                    | Q4          | 2.72                     | 4.14          | -1.42                   | Q4          | 5.13                     | 4.32         | 0.81                    |             |                          |              |                         |
| <b>2003</b> | <b>65.13</b>             | <b>48.54</b>  | <b>16.59</b>            | <b>2009</b> | <b>71.77</b>             | <b>34.47</b>  | <b>37.30</b>            | <b>2015</b> | <b>-2.88</b>             | <b>-1.38</b> | <b>-1.50</b>            |             |                          |              |                         |
| Q1          | 9.23                     | 5.58          | 3.65                    | Q1          | 9.46                     | 7.61          | 1.85                    | Q1          | -1.67                    | -4.68        | 3.01                    |             |                          |              |                         |
| Q2          | 2.91                     | 0.09          | 2.82                    | Q2          | -11.23                   | -9.22         | -2.01                   | Q2          | 6.41                     | 3.24         | 3.16                    |             |                          |              |                         |
| Q3          | -1.55                    | -6.01         | 4.47                    | Q3          | 5.95                     | 12.83         | -6.88                   | Q3          | 9.47                     | 9.22         | 0.25                    |             |                          |              |                         |
| Q4          | 16.66                    | 15.08         | 1.58                    | Q4          | 14.68                    | 17.11         | -2.43                   | Q4          | 5.36                     | 3.57         | 1.79                    |             |                          |              |                         |
| <b>2004</b> | <b>29.11</b>             | <b>14.31</b>  | <b>14.80</b>            | <b>2010</b> | <b>18.07</b>             | <b>29.09</b>  | <b>-11.02</b>           | <b>2016</b> | <b>20.67</b>             | <b>11.32</b> | <b>9.35</b>             |             |                          |              |                         |
| Q1          | -4.65                    | -6.83         | 2.17                    | Q1          | 3.08                     | 9.24          | -6.15                   | Q1          | 7.40                     | 5.35         | 2.06                    |             |                          |              |                         |
| Q2          | 1.31                     | 3.48          | -2.17                   | Q2          | -0.77                    | -0.59         | -0.18                   | Q2          | 8.37                     | 4.39         | 3.98                    |             |                          |              |                         |
| Q3          | 7.78                     | 6.32          | 1.46                    | Q3          | -23.13                   | -22.25        | -0.88                   | Q3          | 5.11                     | 6.22         | -1.11                   |             |                          |              |                         |
| Q4          | -1.29                    | 1.61          | -2.90                   | Q4          | 12.32                    | 14.99         | -2.67                   | Q4          | 5.14                     | 4.59         | 0.56                    |             |                          |              |                         |
| <b>2005</b> | <b>2.76</b>              | <b>4.15</b>   | <b>-1.39</b>            | <b>2011</b> | <b>-11.68</b>            | <b>-2.91</b>  | <b>-8.77</b>            | <b>2017</b> | <b>28.63</b>             | <b>22.17</b> | <b>6.47</b>             |             |                          |              |                         |

<sup>1</sup>Reflects the inception of the strategy's current management style. At this time, changes were made to the portfolio management team and the way the philosophy was implemented. Actual composite inception precedes this date. This information is supplemental to the composite disclosure slide located in the appendix.

**Past performance is not indicative of future returns.** Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair's Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.

# Small Cap Growth Strategy

## Performance for periods ending September 30, 2018

| Composite Performance (% USD)   | Qtr         | YTD          | 1 Yr         | Annualized (%) |              |              |                                  |                                     |
|---------------------------------|-------------|--------------|--------------|----------------|--------------|--------------|----------------------------------|-------------------------------------|
|                                 |             |              |              | 3 Yr           | 5 Yr         | 10 Yr        | Since<br>(Jan 1 00) <sup>1</sup> | Strategy<br>Inception<br>(Jan 1 89) |
| <b>Small Cap Growth (Gross)</b> | <b>6.15</b> | <b>23.42</b> | <b>29.77</b> | <b>26.29</b>   | <b>15.84</b> | <b>16.23</b> | <b>12.19</b>                     | <b>13.71</b>                        |
| <b>Small Cap Growth (Net)</b>   | <b>5.88</b> | <b>22.51</b> | <b>28.48</b> | <b>25.03</b>   | <b>14.69</b> | <b>15.07</b> | <b>11.08</b>                     | <b>12.59</b>                        |
| Russell 2000 Growth Index       | 5.52        | 15.76        | 21.06        | 17.98          | 12.14        | 12.65        | 5.92                             | 8.87                                |
| Relative Performance (Gross)    | 0.62        | 7.67         | 8.71         | 8.31           | 3.70         | 3.58         | 6.28                             | 4.84                                |

| Annual Composite Performance (% USD) | 2017         | 2016         | 2015         | 2014        | 2013         | 2012         | 2011          | 2010         | 2009         | 2008          | 2007         | 2006         | 2005        | 2004         | 2003         |
|--------------------------------------|--------------|--------------|--------------|-------------|--------------|--------------|---------------|--------------|--------------|---------------|--------------|--------------|-------------|--------------|--------------|
| <b>Small Cap Growth (Gross)</b>      | <b>28.63</b> | <b>20.67</b> | <b>-2.88</b> | <b>4.04</b> | <b>54.69</b> | <b>19.88</b> | <b>-11.68</b> | <b>18.07</b> | <b>71.77</b> | <b>-46.44</b> | <b>-0.84</b> | <b>15.91</b> | <b>2.76</b> | <b>29.11</b> | <b>65.13</b> |
| <b>Small Cap Growth (Net)</b>        | <b>27.36</b> | <b>19.47</b> | <b>-3.84</b> | <b>3.00</b> | <b>53.16</b> | <b>18.68</b> | <b>-12.56</b> | <b>16.90</b> | <b>70.06</b> | <b>-47.00</b> | <b>-1.82</b> | <b>14.77</b> | <b>1.75</b> | <b>27.85</b> | <b>63.56</b> |
| Russell 2000 Growth Index            | 22.17        | 11.32        | -1.38        | 5.60        | 43.30        | 14.59        | -2.91         | 29.09        | 34.47        | -38.54        | 7.05         | 13.35        | 4.15        | 14.31        | 48.54        |
| Relative Performance (Gross)         | 6.47         | 9.35         | -1.50        | -1.57       | 11.39        | 5.29         | -8.77         | -11.02       | 37.30        | -7.90         | -7.89        | 2.56         | -1.39       | 14.80        | 16.59        |

| Annual Composite Performance (% USD) | 2002          | 2001         | 2000         | 1999         | 1998         | 1997        | 1996         | 1995         | 1994         | 1993         | 1992         | 1991         | 1990        | 1989         |
|--------------------------------------|---------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| <b>Small Cap Growth (Gross)</b>      | <b>-17.58</b> | <b>30.68</b> | <b>-7.44</b> | <b>-6.20</b> | <b>15.44</b> | <b>1.00</b> | <b>13.16</b> | <b>32.53</b> | <b>14.82</b> | <b>22.54</b> | <b>12.84</b> | <b>50.74</b> | <b>3.98</b> | <b>29.62</b> |
| <b>Small Cap Growth (Net)</b>        | <b>-18.41</b> | <b>29.40</b> | <b>-8.36</b> | <b>-7.14</b> | <b>14.30</b> | <b>0.00</b> | <b>12.05</b> | <b>31.25</b> | <b>13.70</b> | <b>21.35</b> | <b>11.73</b> | <b>49.29</b> | <b>2.95</b> | <b>28.36</b> |
| Russell 2000 Growth Index            | -30.26        | -9.23        | -22.43       | 43.09        | 1.23         | 12.95       | 11.26        | 31.04        | -2.43        | 13.37        | 7.77         | 51.19        | -17.41      | 20.17        |
| Relative Performance (Gross)         | 12.68         | 39.90        | 14.99        | -49.29       | 14.21        | -11.95      | 1.89         | 1.49         | 17.25        | 9.17         | 5.07         | -0.45        | 21.39       | 9.45         |

<sup>1</sup>Reflects the inception of the strategy's current portfolio management team. Actual composite inception precedes the team's inception date. This information is supplemental to the William Blair Composite Disclosure slides located in the appendix.

**Past performance is not indicative of future returns.** Net investment performance represents the deduction of the highest possible fee. Actual client net returns may be higher or lower depending on fees charged to your account and the amount invested.

Returns for periods greater than one year are annualized. Gross performance results shown do not reflect the deduction of investment management fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs. Performance results will be reduced by the fees incurred in the management of the account. For example, assuming an annual gross return of 8% and an annual management/advisory fee of .40%, the net annualized total return of the portfolio would be 7.58% over a 5-year period. Net investment performance represents the deduction of the highest possible fee. Investment management fees are described in William Blair's Form ADV Part 2A. The Russell 2000 Growth Index is an unmanaged index registered to Russell/Mellon. It measures the performance of those Russell Small Cap companies with higher price-to-book ratios and higher forecasted growth values. It is a capitalization-weighted index as calculated by Russell on a total return basis with dividends reinvested. Investing in smaller companies involves special risks, including higher volatility and lower liquidity. Please see composite disclosure in appendix for a complete description of the composite.

# Composite Presentation Report

## Small Cap Growth

| Calendar Year | Composite Gross Return (%) | Composite Net Return (%) | Russell 2000 Growth Return (%) | Composite 3-Yr Std Dev (%) | Benchmark 3-Yr Std Dev (%) | Number of Portfolios | Dispersion (%) | Composite Assets End of Period \$(mm) | Percentage of Total Firm Assets (%) |
|---------------|----------------------------|--------------------------|--------------------------------|----------------------------|----------------------------|----------------------|----------------|---------------------------------------|-------------------------------------|
| 2008          | -46.44                     | -47.00                   | -38.54                         | 20.82                      | 21.26                      | 10                   | 0.25           | 510.61                                | 1.95                                |
| 2009          | 71.77                      | 70.06                    | 34.47                          | 26.93                      | 24.85                      | 9                    | 0.47           | 828.51                                | 2.26                                |
| 2010          | 18.07                      | 16.90                    | 29.09                          | 29.71                      | 27.70                      | 13                   | 0.18           | 1,167.97                              | 2.64                                |
| 2011          | -11.68                     | -12.56                   | -2.91                          | 26.17                      | 24.31                      | 17                   | 0.39           | 1,138.67                              | 2.76                                |
| 2012          | 19.88                      | 18.68                    | 14.59                          | 21.22                      | 20.72                      | 16                   | 0.15           | 910.44                                | 1.84                                |
| 2013          | 54.69                      | 53.16                    | 43.30                          | 17.39                      | 17.27                      | 13                   | 0.22           | 1,063.63                              | 1.72                                |
| 2014          | 4.04                       | 3.00                     | 5.60                           | 13.11                      | 13.82                      | 14                   | 0.05           | 861.90                                | 1.37                                |
| 2015          | -2.88                      | -3.84                    | -1.38                          | 13.65                      | 14.95                      | 14                   | 0.03           | 706.09                                | 1.09                                |
| 2016          | 20.67                      | 19.47                    | 11.32                          | 14.50                      | 16.67                      | 13                   | 0.12           | 733.44                                | 1.13                                |
| 2017          | 28.63                      | 27.36                    | 22.17                          | 13.16                      | 14.59                      | 9                    | 0.14           | 717.09                                | 0.97                                |

### Disclosures:

William Blair Investment Management claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. William Blair Investment Management has been independently verified for the periods January 1, 1993 through December 31, 2017. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Small Cap Growth Composite has been examined for the periods presented through December 31, 2017. The verification and performance examination reports are available upon request.

For purposes of compliance with GIPS, the Firm is defined as all portfolios managed by William Blair Investment Management ("WBIM"), a distinct operating unit within William Blair. WBIM currently operates as William Blair Investment Management, LLC, an investment adviser registered with the United States Securities and Exchange Commission ("SEC"). Registration with the SEC does not imply a certain level of skill or training. WBIM primarily manages assets for institutional investors. Through 2017, WBIM included an additional sub unit, named IM Counseling, which primarily managed assets for private wealth investors, under an affiliated registered investment adviser.

The Small Cap Growth strategy invests in a diversified portfolio of primarily small- and micro-capitalization companies of high quality with sustainable growth characteristics.

The benchmark that best reflects the composite's investment style is the Russell 2000® Growth Index, which measures the performance of those Russell 2000® companies with higher price-to-book ratios and higher forecasted growth rates.

Portfolios must have an initial market value greater than or equal to \$1 million to be included in the composite. New portfolios are added to the composite at the beginning of the month following the first full calendar month under management. Prior to July 2007, new portfolios were added to the composite at the beginning of the quarter following two full calendar months under management. Portfolios will be excluded from the composite the first month immediately following the last complete month of authorized management by the Firm. Portfolios are removed from this composite, in the event of a significant cash flow, for the month during which the flow occurs. Portfolios are typically added back into the composite the following month. A portfolio is determined to have a significant cash flow if the accumulated net external flows of cash and/or securities during a month total more than 25% of the beginning of month portfolio market value. Additional information regarding the treatment of significant cash flows is available upon request.

Portfolio and composite returns are calculated daily. Prior to January 2009, portfolio returns were calculated monthly using a time-weighted monthly linked return formula with adjustments for cash flows and composites were calculated monthly by weighting portfolio returns based on beginning of month market value. Valuations and returns are denominated in U.S. Dollars. Accrual accounting is used for dividends. The dividend accruals included in portfolio valuations are net of applicable withholding taxes. Pending withholding tax reclaims are not accrued for in the portfolio valuations. Composite dispersion measures represent the consistency of a firm's composite performance with respect to the individual portfolio returns within a composite. The dispersion of annual returns is measured by the asset-weighted standard deviation of the gross returns in the composite. Dispersion includes only those portfolios that have been included in the composite for the entire year. The three-year annualized standard deviation measures the variability of the gross composite returns and the benchmark returns over the preceding 36-month period. This statistic is not presented until there are 36 months of performance available.

Performance results are stated gross of management fees and net of the maximum management fee. The management fee schedule is as follows:

First \$10,000,000: 1.00%  
 Next \$20,000,000: 0.95%  
 Next \$20,000,000: 0.90%  
 Next \$50,000,000: 0.85%  
 Over \$100,000,000: 0.80%

The Small Cap Growth Composite was created in October 2001. The composite performance inception date is January 1, 1989. Through March 2017, the composite was named Institutional Small Cap Growth Team. From April 2017 through February 2018, the composite was named Institutional Small Cap Growth.

A complete list and description of firm composites is available upon request. Additional information regarding policies for valuing portfolios, calculating performance and preparing compliant presentations is also available upon request. Past performance is not indicative of future results.



# **PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS**



JANUARY 2019

**Asset Liability Study: Introduction and Overview**

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**Past performance is no guarantee of future results.** This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other “forward-looking statements.” No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. and Verus Investors, LLC (“Verus”) file a single form ADV under the United States Investment Advisors Act of 1940, as amended.

# Overview

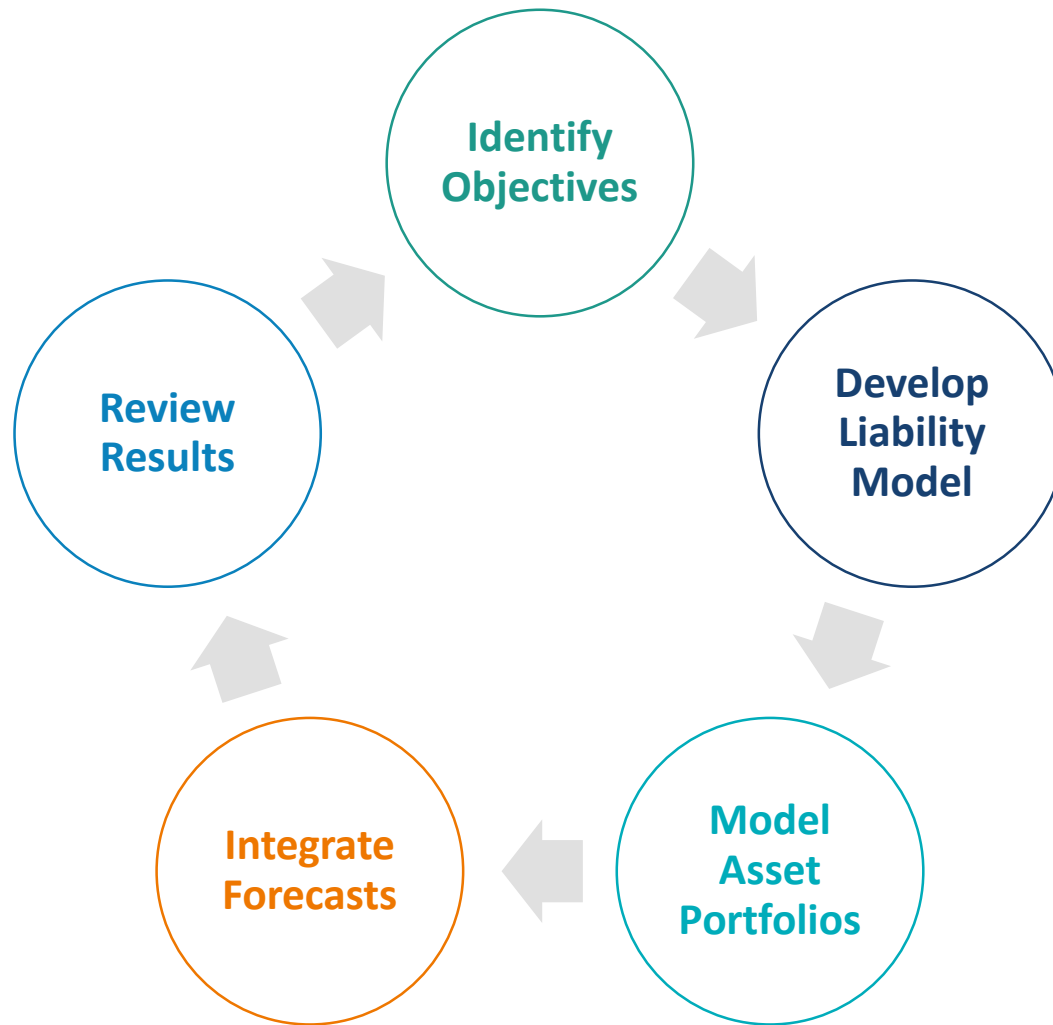
# Overview

ACERA conducts an Asset-Liability study periodically to review the plan's objectives, risks, liabilities and asset allocation in a comprehensive framework

- Asset-liability (AL) studies are a means of revisiting and prioritizing overriding goals and objectives for ACERA.
  - Enterprise Risk Tolerance (ERT) survey gauges primary goals and risks as defined by ACERA's stakeholders.
- AL studies incorporate updated Plan liabilities and help determine if asset allocation should be modestly revised based on asset-liability integration modeling.
  - AL studies are a mechanism to evaluate the impact of *significant* changes to asset allocation.

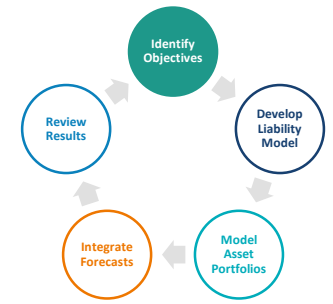


# Asset-liability modeling process





# Identify objectives



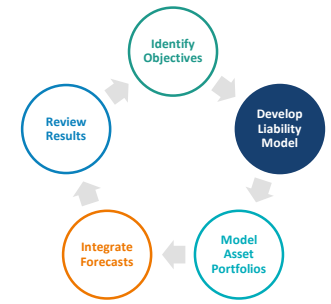
We generally view AL Studies as a mechanism to evaluate the impact of significant changes to the asset allocation methodology.

— What questions are we trying to answer?

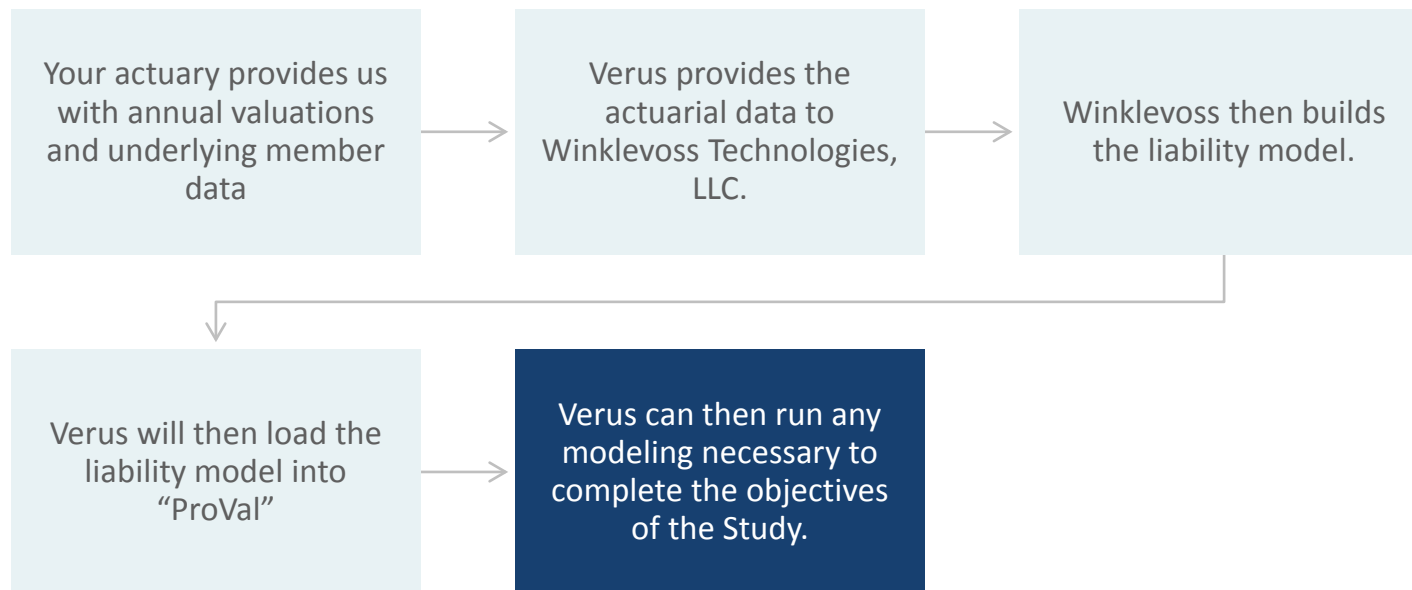
- How the risk of drawdowns impacts the future viability of the institution?
- Finding the right hedge to protect against liabilities?
- How major changes to the risk profile of the assets will affect future funded status?
- How plan sponsor contributions are impacted by underperforming the actuarial assumed return?

# Liability modeling

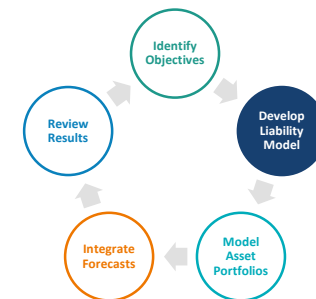
# Develop liability model



- We partner with an industry-leading firm that specializes in actuarial valuation models.
- This enables us and our clients to obtain the necessary expertise to accurately capture all of the applicable data and assumptions at the individual participant level.



# Outsourced liability modeling



## Winklevoss Technologies, LLC

- Founded in 1987 by Howard Winklevoss.
- 30+ employees including 14 registered actuaries on staff
- Market Leader in North America
- 275+ client firms licensed in 30 nations
- Tens of thousands of end-users

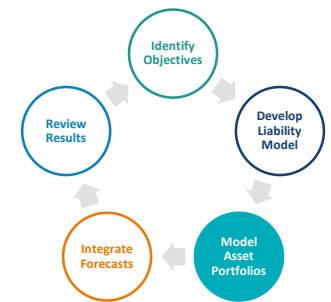


## ProVal (software)

- Valuation & forecasting system designed specifically for actuaries and asset consultants.
- Can tailor assumptions to virtually any asset and funding policy
- End-to-end integrated system incorporates:
  - Census data
  - Pension & OPEB liabilities
  - Contribution & expenses
  - Stochastic and Deterministic forecasts

# Asset modeling

# Asset modeling

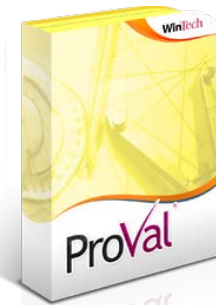


- We begin by uploading our 10 year capital market assumptions into the software.
- We have the flexibility to analyze the results using varied assumptions.
- We then load in the asset allocation(s), dependent on the objective of the study.
- After the results are first analyzed, this may result in refining the asset allocation.

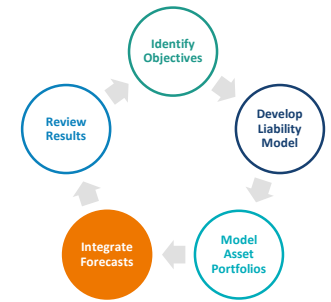
| 10 year return & risk assumptions |                                    |                          |            |                             |                  |          |                                      |
|-----------------------------------|------------------------------------|--------------------------|------------|-----------------------------|------------------|----------|--------------------------------------|
| Asset Class                       | Index Proxy                        | Ten Year Return Forecast |            | Standard Deviation Forecast | Sharpe Ratio (a) |          | Ten Year Historical Sharpe Ratio (a) |
|                                   |                                    | Geometric                | Arithmetic |                             | Forecast         | Forecast |                                      |
| Equities                          |                                    |                          |            |                             |                  |          |                                      |
| US Large                          | S&P 500                            | 9.9%                     | 7.0%       | 19.1%                       | 0.56             | 0.33     | 0.40                                 |
| US Small                          | Russell 2000                       | 5.2%                     | 7.0%       | 19.8%                       | 0.16             | 0.25     | 0.28                                 |
| International Developed           | MSCI EAFE                          | 9.2%                     | 10.8%      | 18.5%                       | 0.39             | 0.47     | 0.10                                 |
| International Small               | MSCI EAFE Small Cap                | 8.6%                     | 10.4%      | 19.7%                       | 0.33             | 0.43     | 0.17                                 |
| Emerging Markets                  | MSCI EM                            | 11.3%                    | 13.6%      | 21.6%                       | 0.39             | 0.48     | 0.10                                 |
| Global Equity                     | MSCI ACWI                          | 7.7%                     | 9.3%       | 16.9%                       | 0.34             | 0.42     | 0.21                                 |
| Private Equity                    | Cambridge Private Equity           | 8.2%                     | 11.0%      | 22.7%                       | 0.56             | 0.37     | 1.01                                 |
| Fixed Income                      |                                    |                          |            |                             |                  |          |                                      |
| Cash                              | 30 Day T-Bills                     | 2.0%                     | 2.0%       | 0.6%                        | -                | -        | -                                    |
| US TIPS                           | Barclays US TIPS 5 - 10            | 2.7%                     | 2.9%       | 6.9%                        | 0.11             | 0.14     | 0.43                                 |
| US Treasury                       | Barclays Treasury 7 - 10 year      | 2.3%                     | 2.5%       | 6.5%                        | 0.04             | 0.07     | 0.67                                 |
| Global Sovereign ex US            | Barclays Global Treasury ex US     | 2.6%                     | 2.9%       | 7.8%                        | 0.07             | 0.11     | 0.24                                 |
| Core Fixed Income                 | Barclays US Aggregate Bond         | 3.2%                     | 3.2%       | 2.2%                        | 0.37             | 0.40     | 1.00                                 |
| Core Plus Fixed Income            | Barclays US Corporate IG           | 4.2%                     | 4.4%       | 6.0%                        | 0.33             | 0.40     | 0.68                                 |
| Short Term Govt/Credit            | Barclays US Govt/Credit 1 - 3 year | 2.5%                     | 2.5%       | 1.3%                        | 0.27             | 0.27     | 1.20                                 |
| Short Term Credit                 | Barclays Credit 1 - 3 year         | 2.9%                     | 3.0%       | 2.2%                        | 0.40             | 0.46     | 1.01                                 |
| Long Term Credit                  | Barclays Long US Corporate         | 4.2%                     | 4.7%       | 10.5%                       | 0.20             | 0.26     | 0.60                                 |
| High Yield Corp. Credit           | Barclays High Yield                | 7.1%                     | 7.6%       | 10.6%                       | 0.48             | 0.53     | 0.54                                 |
| Bank Loans                        | S&P/LSTA                           | 4.1%                     | 4.5%       | 9.1%                        | 0.24             | 0.31     | 0.30                                 |
| Global Credit                     | Barclays Global Credit             | 2.4%                     | 2.7%       | 6.9%                        | 0.06             | 0.10     | 0.50                                 |
| Emerging Markets Debt (Hard)      | JPM EMBI Global Diversified        | 6.4%                     | 6.8%       | 8.8%                        | 0.50             | 0.54     | 0.65                                 |
| Emerging Markets Debt (Local)     | JPM GBI EMI Global Diversified     | 6.8%                     | 7.6%       | 12.9%                       | 0.37             | 0.43     | 0.30                                 |
| Private Credit                    | High Yield + 200bps                | 5.1%                     | 6.7%       | 10.9%                       | 0.65             | 0.71     | -                                    |
| Other                             |                                    |                          |            |                             |                  |          |                                      |
| Commodities                       | Bloomberg Commodity                | 4.0%                     | 5.6%       | 18.2%                       | 0.11             | 0.20     | -0.42                                |
| Hedge Funds                       | HFRF Fund of Funds                 | 6.0%                     | 6.4%       | 9.0%                        | 0.44             | 0.49     | 0.19                                 |
| Hedge Funds (Fund of Funds)       | HFRF Fund of Funds                 | 5.0%                     | 5.4%       | 9.0%                        | 0.33             | 0.38     | -                                    |
| Core Real Estate                  | NCREIF Property                    | 4.7%                     | 5.8%       | 13.2%                       | 0.20             | 0.27     | 0.92                                 |
| Value-Add Real Estate             | NCREIF Property + 200bps           | 6.7%                     | 9.1%       | 21.0%                       | 0.20             | 0.30     | -                                    |
| Diversified Real Estate           | NCREIF Property + 400bps           | 8.7%                     | 13.3%      | 31.2%                       | 0.20             | 0.34     | -                                    |
| REITs                             | Wilshire REIT                      | 4.7%                     | 7.8%       | 26.4%                       | 0.10             | 0.22     | 0.26                                 |
| Risk Parity                       |                                    | 7.0%                     | 7.6%       | 10.0%                       | 0.50             | 0.54     | -                                    |
| Inflation                         |                                    | 2.0%                     | -          | 1.9%*                       | -                | -        | -                                    |

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document -- we will happily provide those details to any readers of this who are interested.

\*Historical volatility of inflation. This is not a forecast.



# Integrate forecasts



With the assets and liabilities loaded into the software, we then begin modeling them in tandem, and analyze the impact of different asset portfolios on the key metrics that have been identified:

## Sample Key Metrics:

- PV of liabilities
- Normal/supplemental cost
- Actuarial funded status
- Volatility of contributions
- Employer/employee contributions
- Contributions as a % of payroll
- Market value funded status

## TYPES OF FORECASTING:

### Deterministic

- A study of cause and effect. Dependent variables are identified in advance. Evaluate impact of change in dependent variable on key metric.
- E.g. If actuarial assumption is not met, what is the impact to future contributions.
- E.g. What is the impact to funded status of a 20% loss in 5 years? In 10 years?

### Stochastic

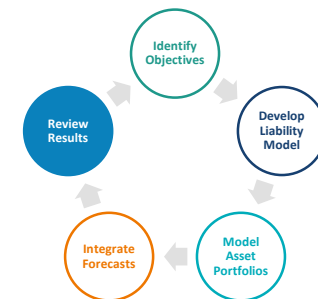
- Also known as Monte Carlo Analysis.
- Measures the most likely outcome given the actuarial assumptions, CMAs, and asset allocations.
- Results in a probability distribution for each time period and asset allocation.

# Results

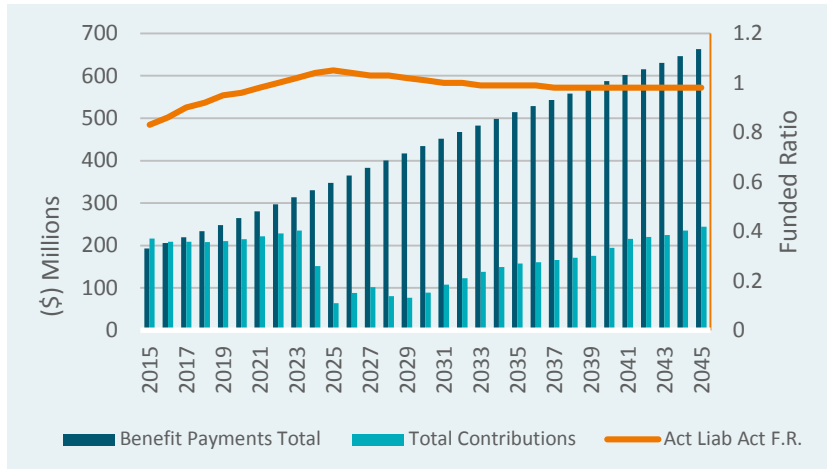
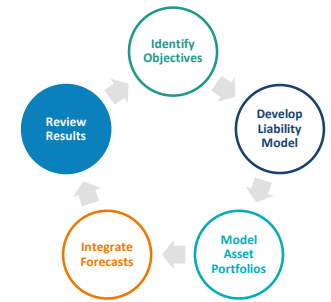


# Review results

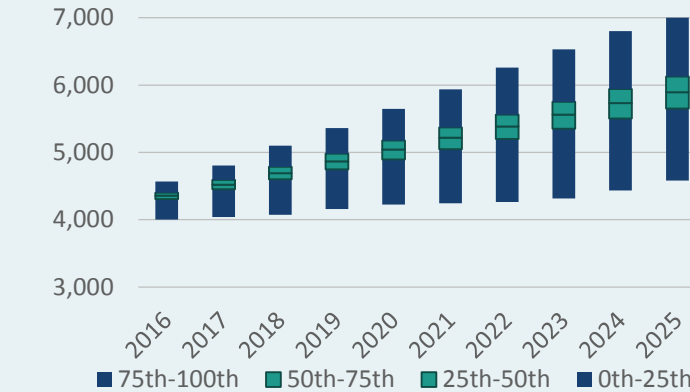
- While ProVal is effective for modeling, it is more of a calculator than a presentation tool.
- Verus compiles the output into a comprehensive presentation to facilitate actionable discussion.
- Each presentation is tailored around the specific objectives of the study.
- This is often an iterative process. Reviewing the results may lead us to identify additional questions we need to be asking followed by revised modeling.



# A focus on key metrics



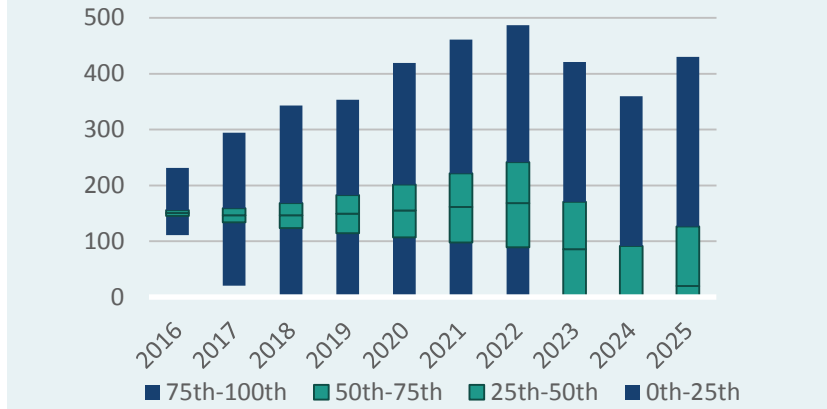
## ACTUARIAL LIABILITY



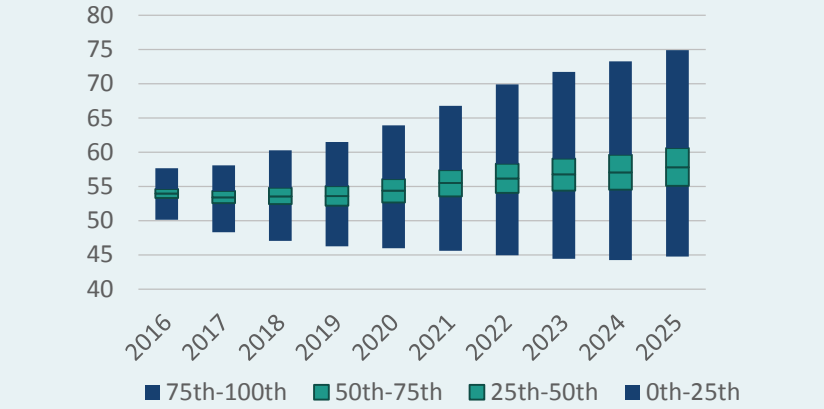
Many AL studies can overwhelm with data

By focusing on key metrics, you are more likely to address the questions you are trying to answer.

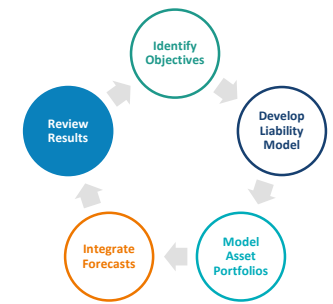
## EMPLOYER CONTRIBUTIONS



## EMPLOYEE CONTRIBUTIONS



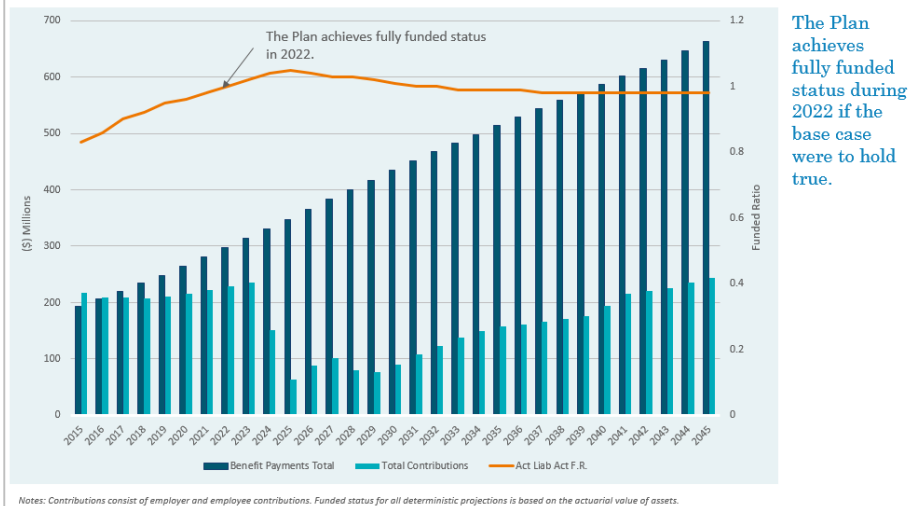
# Deterministic forecasting



— Analyzing the impact of a known event

- Base Case: meeting assumptions.
- Economic Regimes
- Underperforming assumptions

Base case: the plan earns 7.0% every year for next 20 years



Funded status outcomes

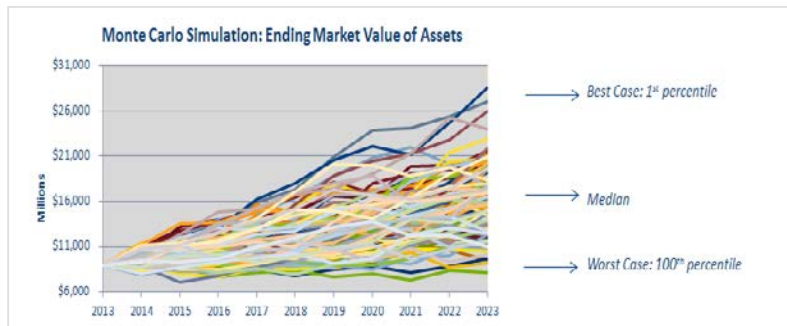
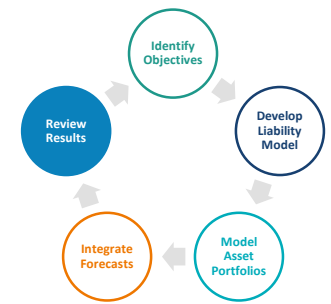
← Annual Returns →

|      | 5.50% | 5.75% | 6.00% | 6.25% | 6.50% | 6.75% | 7.00% |
|------|-------|-------|-------|-------|-------|-------|-------|
| 2015 | 0.83  | 0.83  | 0.83  | 0.83  | 0.83  | 0.83  | 0.83  |
| 2016 | 0.84  | 0.84  | 0.84  | 0.84  | 0.84  | 0.84  | 0.84  |
| 2017 | 0.86  | 0.87  | 0.87  | 0.87  | 0.87  | 0.87  | 0.87  |
| 2018 | 0.89  | 0.89  | 0.89  | 0.89  | 0.9   | 0.9   | 0.9   |
| 2019 | 0.9   | 0.91  | 0.91  | 0.92  | 0.92  | 0.92  | 0.93  |
| 2020 | 0.91  | 0.92  | 0.92  | 0.93  | 0.94  | 0.94  | 0.95  |
| 2021 | 0.93  | 0.93  | 0.94  | 0.95  | 0.96  | 0.96  | 0.97  |
| 2022 | 0.94  | 0.95  | 0.96  | 0.97  | 0.98  | 0.99  | 1     |
| 2023 | 0.95  | 0.96  | 0.97  | 0.99  | 1     | 1.01  | 1.02  |
| 2024 | 0.97  | 0.98  | 0.99  | 1.01  | 1.02  | 1.03  | 1.05  |
| 2025 | 0.97  | 0.98  | 1     | 1.01  | 1.03  | 1.04  | 1.06  |

These deterministic forecasts assume a 7.0% discount rate.

# Stochastic forecasting

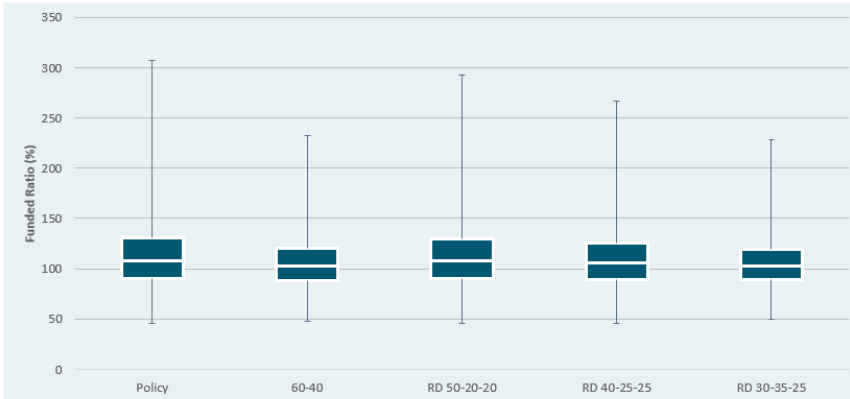
- Assigning probabilities to an unknown future
  - Median, range, and percentile outcomes



While a useful tool, it is important to recognize its limitations. There is only one future outcome. Unless the actual outcome happens to be the median, the forecast will be incorrect.

## Expected funded ratio

FUNDED RATIO SIMULATION FOR PLAN YEAR ENDING 2025

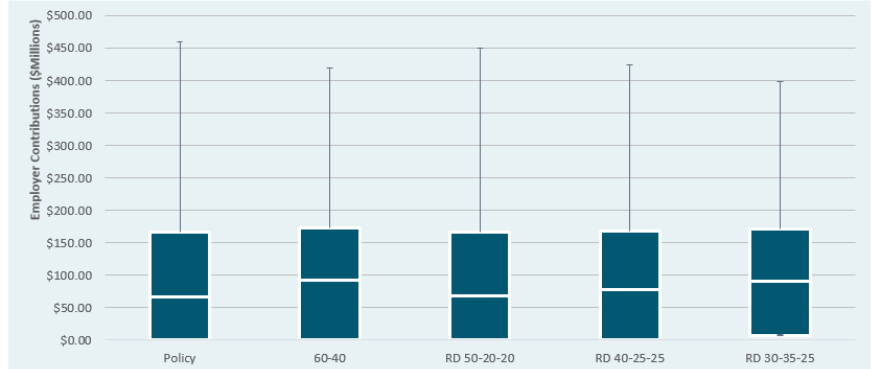


|            | Policy | 60-40 | RD 50-20-20 | RD 40-25-25 | RD 30-35-25 |
|------------|--------|-------|-------------|-------------|-------------|
| Best Case  | 307    | 232   | 293         | 267         | 229         |
| Median     | 108    | 103   | 108         | 106         | 103         |
| Worst Case | 45     | 48    | 45          | 46          | 50          |

Based on 5,000 independent simulations. Best case defined as 100<sup>th</sup> percentile. Worst case defined as 0<sup>th</sup> percentile. Median outcome is the 50<sup>th</sup> percentile.

## Expected employer contributions

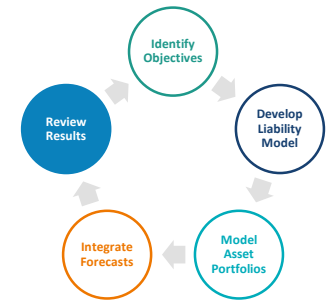
EMPLOYER CONTRIBUTION SIMULATION FOR PLAN YEAR ENDING 2025



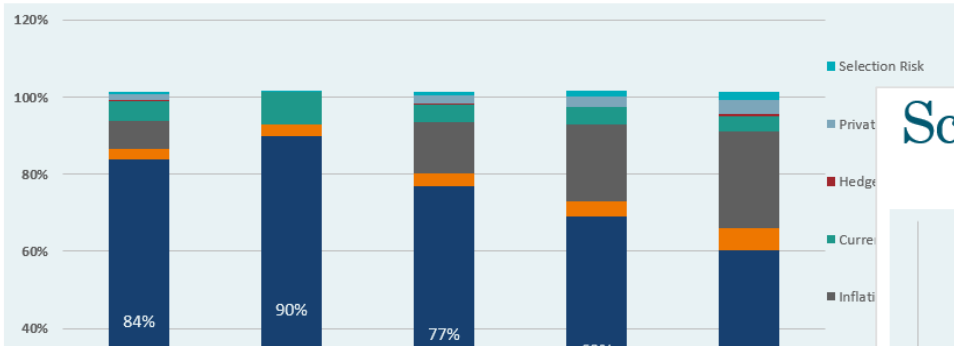
|            | Policy         | 60-40          | RD 50-20-20    | RD 40-25-25    | RD 30-35-25    |
|------------|----------------|----------------|----------------|----------------|----------------|
| Best Case  | -              | -              | -              | -              | -              |
| Median     | 65,858,027.00  | 91,613,558.00  | 68,193,586.00  | 77,115,728.00  | 90,921,010.00  |
| Worst Case | 458,822,661.00 | 419,259,361.00 | 448,838,819.00 | 424,592,345.00 | 398,329,377.00 |

Based on 5,000 independent simulations. Best case defined as 0<sup>th</sup> percentile. Worst case defined as 100<sup>th</sup> percentile. Median outcome is the 50<sup>th</sup> percentile.

# Risk analytics

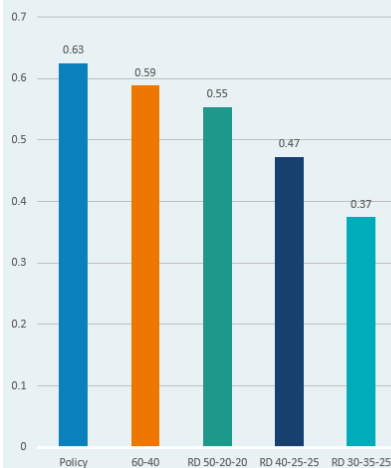


## Risk decomposition



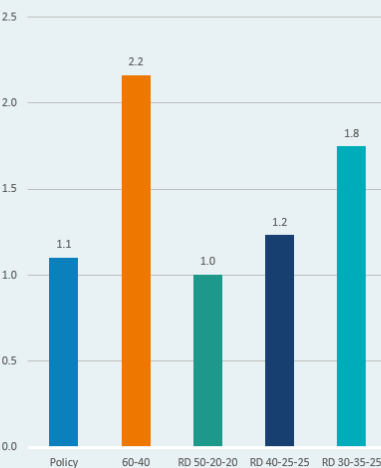
## Sources of risk

### EQUITY BETA



Source: MSCI BARRA

### PORTFOLIO EFFECTIVE DURATION

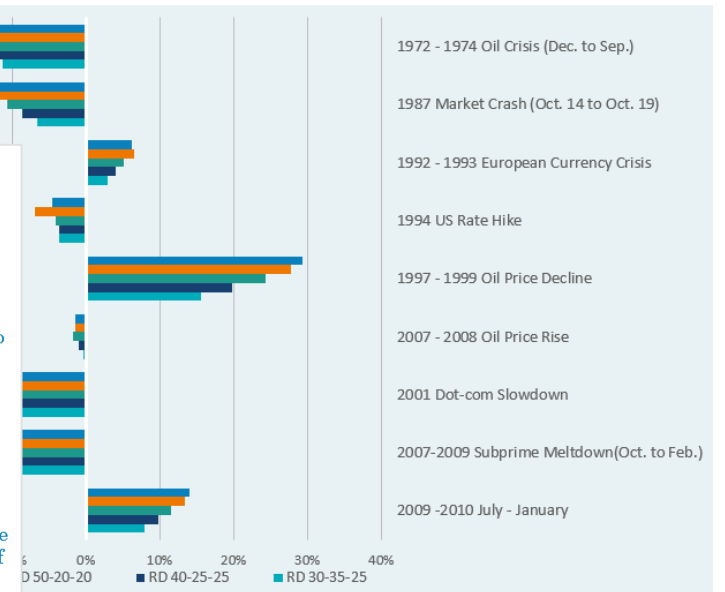


Source: MSCI BARRA

Equity beta measures the sensitivity to the risks of the broad equity market.

Duration measures the sensitivity of the portfolio to a change in interest rates.

## Scenario analysis



# Next Steps

# Next steps

- Verus will work with Segal to incorporate liabilities in the model.
- Verus will simultaneously conduct a survey of Trustees to gain a better understanding of the perceived risks and objectives of the Plan.
- We will present the findings of the survey to the ICM.
- Finally, we will present the findings of the ALM study and incorporate a discussion on the Plan's asset allocation (with potential allocation changes).

# Appendix



# Role of asset classes



Asset classes serve different objectives within a portfolio.

The goal is to construct a diversified portfolio that meets both ACERA's risk and return objectives.

# Glossary

**Actuarial expected return** - A pension fund portfolio's actuarial expected return is the rate used to discount future benefits to determine plan liabilities and is designed to be a reasonable expectation of the future rate of return on the pension plan's assets. Also known as the actuarial assumed rate and the discount rate.

**Asset allocation** – Asset allocation is the process by which an investor aims to balance risk and reward according to the plan's goals, risk tolerance and investment horizon. Assets are allocated between asset classes that have different levels of risk and return and behave differently from one another to provide diversification.

**Bond (Fixed Income)** - A bond is a fixed income instrument that represents a loan made by an investor to a borrower with predetermined terms of payment. A bond has an end date (maturity) when the principal of the loan is due to be paid with terms for variable or fixed interest payments that will be made by the borrower.

**Contributions** – Employer and employee contributions into the system are determined by the plan's annual actuarial valuation and are updated regularly to ensure that contribution rates are sufficient to fund the plan. Actuarial valuations are based on the benefit formulas for the employee groups covered.

**Correlation** – A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help optimize the benefits of diversification when constructing an investment portfolio.

**Diversification** – Diversification is a form of risk management whereby a variety of investments that are uncorrelated are combined in a portfolio with the goal of providing the highest return for a given level of risk. Diversification also mitigates unsystematic (company specific) risk.

# Glossary (continued)

**Downside risk (drawdown risk)** - A measure of volatility, or risk, focusing on downside or negative performance time periods. Drawdown risk is a subset of downside risk that measures peak to trough declines and is defined as the negative half of standard deviation.

**Enterprise risk tolerance (ERT)** - A holistic assessment of risk for a plan that incorporates and extends beyond portfolio risk. In addition to investment risk, the ERT assessment includes regulatory risk, headline risk, peer risk and organizational risk to the system. A plan's ERT is incorporated into strategic decision-making.

**Equities (stocks)** – An equity instrument or stock is a portion of ownership shares in a corporation. Stock ownership entitles the shareholder to part of that corporation's earnings and assets. Common stock holders have the right to vote on major company decisions (e.g., mergers) and receive dividends determined by management.

**Funded ratio (funded status)** – A measurement of the funded status of the system. The funded ratio is calculated by dividing the valuation assets by the actuarial accrued liability. For example, a funded ratio of 90% indicates that assets are 10% less than liabilities.

**Headline risk** – Headline risk refers to bad publicity stemming from unforeseen negative portfolio events.

**Illiquidity** – An illiquid asset is one that is difficult to sell quickly due to price, lack of interest or low trading volume. Private investments (e.g., real estate, private equity) are common examples of illiquid assets in pension plans. Illiquidity risk occurs if the plan has insufficient cash to meet anticipated requirements (e.g., upcoming benefit payments).

# Glossary (continued)

**Leverage** - Portfolio leverage results from using borrowed capital as a funding source when investing to expand the portfolio's asset base with the goal of increasing the potential return of an investment. Leverage can also refer to the amount of debt a firm uses to finance assets (e.g., a company that has more debt than equity).

**Loss of capital** – Loss of capital refers to loss in absolute dollars, as opposed to unrealized losses due to market movement for a given portfolio holding. A capital loss is the loss when an asset is sold for more than its purchase price.

**Peer risk** - Peer risk refers to having a plan portfolio that looks different from the average pension plan. Peer risk is most often highlighted during periods of underperformance versus average plans.

**Standard Deviation** - A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Tracking error** – A measure that shows the standard deviation of the difference between the returns of an investment and its benchmark. The higher the tracking error, the greater the difference of returns compared to the benchmark. Tracking error is also referred to as active risk.

**Transparency** – Transparency is the extent to which investors have ready access to financial information about a company regarding price levels, market liquidity, audited financial reports, etc. Transparency helps market participants base decisions of relative value on the same readily accessible data. Lack of transparency related to investments is when financial information is not readily available and/or not fully disclosed.

# Glossary (continued)

**Volatility** - A statistical measure of the dispersion of returns for a security, index or portfolio. Generally speaking, the higher the volatility, the riskier the investment. Volatility is most commonly measured using standard deviation (defined above).



## Proposed Investment Committee Workplan for 2019

January 9, 2019

|             | Action Items  | Information Items   |
|-------------|---|---|
| January 9   | 1. Interview of the Finalists for ACERA's U.S. Small Cap Growth Manager Search – Domestic Equities and Possible Motion by the Investment Committee to Recommend one Finalist to the Board   | 1. Discussion on Asset – Liability Introduction and Enterprise Risk Tolerance<br>2. Proposed Investment Committee Workplan for 2019   |
| February 13 | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Assets Portfolio<br>2. Discussion of and Possible Motion to Recommend that the Board to Approve an up to \$33 million Investment in Genstar Capital, LLC as part of ACERA's Private Equity Investment Portfolio – Buyouts | 1. 2019 Capital Market Assumptions<br>2. Discussion on the Possible ESG Policy Development<br>3. Investment Committee Workplan 2019   |
| March 13    | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Equities Portfolio   | 1. Asset – Liability Integration<br>2. Education Session: Timberland<br>3. <i>Report of ACERA's Proxy Voting Activities in 2018</i><br>4. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the fourth quarter of 2018</i><br>5. <i>Quarterly report on ACERA's rebalancing activities for the fourth quarter of 2018</i><br>6. <i>Quarterly report on ACERA's securities lending activities for the fourth quarter of 2018</i><br>7. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the fourth quarter of 2018</i><br>8. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the fourth quarter of 2018</i><br>9. <i>Updated Investment Committee Workplan 2019</i> |



## Proposed Investment Committee Workplan for 2019

January 9, 2019

| Action Items   |  | Information Items  |
|--|--|--|
| April 10   | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Asset – Liability Integration Program       |  |
| May 15<br>(meeting moved to third Wednesday due to SACRS Conference) | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Assets Portfolio | 2. Discussion on the ACERA's ESG Policy  |
| June 12  | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt ACERA's ESG Policy                             | 1. Semiannual Performance Review for the Period Ending December 31, 2018 – Equities and Fixed Income<br>2. Semiannual Performance Review for the Period Ending December 31, 2018 – Private Equities<br>3. Semiannual Performance Review for the Period Ending December 31, 2018 – Absolute Return<br>4. Semiannual Performance Review for the Period Ending December 31, 2018 – Real Assets<br>5. Semiannual Performance Review for the Period Ending December 31, 2018 – Real Estate<br>6. <i>Quarterly report of ACERA's investment manager, consultant, and custodian fees for the first quarter of 2019</i><br>7. <i>Quarterly report on ACERA's rebalancing activities for the first quarter of 2019</i><br>8. <i>Quarterly report on ACERA's securities lending activities for the first quarter of 2019</i> |



## Proposed Investment Committee Workplan for 2019

January 9, 2019

| Action Items |   | Information Items   |
|--------------|---|---|
|              |   | 9. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the first quarter of 2019</i><br>10. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2019</i><br>11. <i>Updated Investment Committee Workplan 2019</i>   |
| July 10      | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Equities Portfolio<br>2. Discussion of and Possible Motion to Recommend to the Board to Approve an Investment in ACERA's Real Estate Portfolio |   |
| August 14    | 1. Discussion of and Possible Motion to Recommend to the Board to Approve an Investment in ACERA's Real Assets Portfolio – Infrastructure Fund  | 1. Review of State Street Bank and Trust Company<br>2. Discussion on the Emerging Investment Manager Policy   |
| September 11 | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Equities Portfolio<br>2. Discussion of and Possible Motion to Recommend to the Board to Adopt Amendments on ACERA's Emerging Manager Policy    | 1. Discussion on Hedge Fund/Absolute Return<br>2. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the second quarter of 2019</i><br>3. <i>Quarterly report on ACERA's rebalancing activities for the second quarter of 2019</i><br>4. <i>Quarterly report on ACERA's securities lending activities for the second quarter of 2019</i><br>5. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the second quarter of 2019</i><br>6. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2019</i><br>7. <i>Updated Investment Committee Workplan for 2019</i> |





## Proposed Investment Committee Workplan for 2019

January 9, 2019

### Action Items

### Information Items

|  |  |  |
|--|--|--|
| October 9  | 1. Discussion of and Possible Motion to Recommend that the Board approve a 3-Year Extension of the Custody Contract with State Street Bank and Trust Company | 1. Education Session: Investment Due Diligence |
| November 6<br>(meeting moved to first Wednesday due to SACRS Conference) | 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Equities Portfolio                                  |  |



## Proposed Investment Committee Workplan for 2019

January 9, 2019

| Action Items |  | Information Items   |
|--------------|--|---|
| December 11  |  | <ol style="list-style-type: none"> <li>1. Semiannual Performance Review for the Period Ending June 30, 2019 – Equities and Fixed Income</li> <li>2. Semiannual Performance Review for the Period Ending June 30, 2019 – Private Equity</li> <li>3. Semiannual Performance Review for the Period Ending June 30, 2019 – Absolute Return</li> <li>4. Semiannual Performance Review for the Period Ending June 30, 2019 – Real Assets</li> <li>5. Semiannual Performance Review for the Period Ending June 30, 2019 – Real Estate</li> <li>6. CA Gov Code § 7514.7 Information Report</li> <li>7. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the third quarter of 2019</i></li> <li>8. <i>Quarterly report on ACERA's rebalancing activities for the third quarter 2019</i></li> <li>9. <i>Quarterly report on ACERA's securities lending activities for the third quarter of 2019</i></li> <li>10. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the third quarter of 2019</i></li> <li>11. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2019</i></li> <li>12. <i>Updated Investment Committee Workplan for 2019</i></li> </ol> |

### Notes:

1. This workplan is subject to change without prior notice. Periodic rearrangements of agenda items will be made to the workplan to provide a reasonable length of time for each meeting.
2. Meeting date is assumed to be the second Wednesday of each month.
3. Educational sessions may be added to the Agenda from time-to-time e.g., Portable Alpha, Market and Currency Overlay, Equity Overlay, and Emerging Managers in Private Equity investments. Recommendations and reports on ACERA's Real Estate, Private Equity, Absolute Return, and Real Assets investments will be added to the Agenda from time-to-time.