

**South Carolina Retirement System Investment Commission
Verification and Total Fund Composite Performance Examination
Report**

June 30, 2019



Verification and Performance Examination Report

We have verified whether South Carolina Retirement System Investment Commission (the "Firm") (1) has complied with all the composite construction requirements of the Global Investment Performance Standards (GIPS®) on a firm-wide basis for the periods from July 1, 2017 through June 30, 2019, and (2) designed its policies and procedures to calculate and present performance in compliance with the GIPS standards as of June 30, 2019. We have also conducted a performance examination of the Firm's Total Fund Composite for the periods from July 1, 2017 through June 30, 2019. The Firm's management is responsible for compliance with the GIPS standards and the design of its policies and procedures and for the Total Fund Composite's compliant presentation. Our responsibility is to express an opinion based on our verification and performance examination. We conducted this verification and performance examination in accordance with the required verification and performance examination procedures of the GIPS standards. We also conducted such other procedures as we considered necessary in the circumstances.

In our opinion, the Firm has, in all material respects:

- Complied with all the composite construction requirements of the GIPS standards on a firm-wide basis for the periods from July 1, 2017 through June 30, 2019; and
- Designed its policies and procedures to calculate and present performance in compliance with the GIPS standards as of June 30, 2019.

Also, in our opinion, the Firm has, in all material respects:

- Constructed the Total Fund Composite and calculated the Total Fund Composite's performance for the periods from July 1, 2017 through June 30, 2019 in compliance with the GIPS standards; and
- Prepared and presented the Total Fund Composite's accompanying compliant presentation for the periods from July 1, 2017 through June 30, 2019 in compliance with the GIPS standards.

This report does not relate to or provide assurance on any composite compliant presentation of the Firm other than the Firm's Total Fund Composite.

ACA Performance Services, LLC

ACA Performance Services, LLC
October 18, 2019

GIPS Compliant Presentation

Total Fund Composite

July 1, 2017 through June 30, 2019



SOUTH CAROLINA RETIREMENT SYSTEM
INVESTMENT COMMISSION

Fiscal Year	Total Fund Net Return %	Net-of-External Cost-Only Return %	Net Money Weighted Return (IRR) %	Policy Benchmark Return %	% of Externally Managed Assets	Total Composite Assets (Equals Total Firm Assets) (\$ billions)	3-Year Annualized Standard Deviation	
							Total Fund Net Return %	Benchmark Return %
2018	7.79	7.82	7.89	7.28	95	31.2	n/a	n/a
2019	5.80	5.84	5.76	6.50	93	31.9	n/a	n/a

South Carolina Retirement System Investment Commission (RSIC) claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. RSIC has been independently verified for the periods from July 1, 2017 through June 30, 2019.

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 Total Fund Composite has been examined for the periods from July 1, 2017 through June 30, 2019. The verification and performance examination reports are available upon request.

Accompanying Notes

1. For the purpose of complying with the GIPS standards, the firm is defined as the South Carolina Retirement System Investment Commission (RSIC) which was established October 1, 2005 by the State Retirement System Preservation and Investment Reform Act (Act 153) and is responsible for investing and managing all assets held in trust for the participants and beneficiaries of the five defined benefit plans: South Carolina Retirement System (SCRS), South Carolina Police Officers Retirement System (PORS), Retirement System for Judges and Solicitors of the State of South Carolina (JSRS), Retirement System for Members of the General Assembly of the State of South Carolina (GARS), and the National Guard Retirement System (SCNG), collectively referred to hereinafter as the ("Retirement System") or ("Systems").

2. The Total Fund Composite includes all discretionary assets held in trust and managed by RSIC for the benefit of participants and beneficiaries in the Retirement System. The Policy Benchmark is calculated monthly using a blend of asset class benchmarks based on the target weights for the respective asset classes. The target weights to Private Equity, Private Debt, Private Real Estate, and Private Infrastructure are their actual beginning adjusted market value weights as calculated by the custodial bank. When flows have occurred in the asset classes, adjusted weights more accurately reflect the impact of the asset class weights. In the case of Private Equity, the use of the flow adjusted weight will affect the target allocation to Public Equity such that the combined target weight of both asset classes shall equal 44% of the Plan. For Private Debt, the use of the flow adjusted weight will affect the target allocation to Mixed Credit such that the combined target weight of both asset classes shall equal 11% of the Plan. For Private Real Estate, the use of the flow adjusted weight will affect the target allocation to Public Real Estate, such that the combined target weight of both asset classes shall equal 9% of the Plan. For Private Infrastructure, the use of the flow adjusted weight will affect the target allocation to Public Infrastructure, such that the combined target weight of both asset classes shall equal 3% of the Plan. Portable Alpha Hedge Funds are expressed as gross exposure but, as collateral supporting the Overlay program, net to zero when calculating total Plan market value. For benchmarking purposes, there is a 10% weight assigned to Portable Alpha Hedge Funds in the Policy benchmark. The asset class weights listed below are as of June 30, 2019. Information for asset class benchmarks and weights for other periods is available upon request.

Asset Allocation	Policy Target 06/30/2019	Actual Weight 06/30/2019	Policy Benchmark
Global Equity	51.0%	51.5%	
Global Public Equity	36.7%	37.3%	Weighted average of regional sub-asset class targets in Policy Portfolio. 51.4% MSCI US IMI Index for U.S. Equity, 31.4% MSCI World ex-US IMI Index for Developed Market Equity (non-U.S.), and 17.1% MSCI Emerging Markets IMI Index for Emerging Market Equity
Private Equity	7.3%	7.1%	80% Russell 3000 Index / 20% MSCI EAFE (net of dividends) blend on a 3-month lag + 300 bps
Equity Options Strategies	7.0%	7.1%	50% CBOE S&P Buy Write Index (BXM) / 50% CBOE S&P 500 Put Write Index (PUT)
Rate Sensitive	14.0%	13.5%	
Core Fixed Income	11.0%	5.3%	Bloomberg Barclays US Aggregate Bond Index
TIPS	2.0%	1.9%	Bloomberg Barclays US Treasury Inflation Notes TR Index Value Unhedged USD
Cash & Short Duration	1.0%	6.3%	ICE BofA Merrill Lynch 3-Month US Treasury Bill Index
Credit	15.0%	13.9%	
High Yield Bonds/Bank Loans	4.9%	4.2%	50% Bloomberg Barclays US Corp High Yield 2% Issuer Cap Bond Index / 50% S&P LSTA Leveraged Loan Index blend
Private Debt	6.1%	6.3%	S&P/LSTA Leveraged Loan Index on a 3-month lag + 150 bps
Emerging Markets Debt	4.0%	3.4%	50% JP Morgan EMBI Global Diversified (US Dollar) / 50% JP Morgan GBI-EM Global Diversified (Local) blend
Real Assets	12.0%	11.8%	
Public Real Estate (REITs)	1.5%	1.3%	FTSE NAREIT Equity REITs Index
Private Real Estate	7.5%	7.5%	NCREIF Open-End Diversified Core (ODCE) Index Net of Fees + 100 basis points
Public Infrastructure	2.6%	2.5%	Dow Jones Brookfield Global Infrastructure Net Index
Private Infrastructure	0.4%	0.5%	Dow Jones Brookfield Global Infrastructure Net Index
Opportunistic	18.0%	9.3%	
Global Tactical Asset Allocation	7.0%	7.5%	Total System Policy Benchmark ex-Private Markets and Portable Alpha
Other Opportunistic Strategies	1.0%	1.8%	Total System Policy Benchmark ex-Private Markets and Portable Alpha
Portable Alpha Hedge Funds	10.0%	9.7%	250 basis points
Total Plan	110.0%	100.0%	

Sub-asset class percentages may not add up to asset class percentages due to rounding.

Asset Class Descriptions

Global Public Equity

The global public equity asset class includes domestic equity, international equity, and emerging markets equity. Domestic equity purchases are limited to common stocks, preferred stocks, mutual funds, Exchange Traded Funds (“ETFs”), American Depository Receipts (“ADRs”) and convertibles that are publicly traded. Convertible bonds, convertible preferred stocks, warrants, rights, and ETFs may be purchased as equity substitutes as long as they meet the equity guidelines. Equity accounts are expected to be fully invested and managers are encouraged to utilize suitable ETFs relative to the account benchmark to keep cash from exceeding 5%. International managers may enter into forward exchange contracts on currency provided that use of such contracts is designed to dampen account volatility or to facilitate the settlement of securities transactions. Current equity implementation features a combination of passive, enhanced, and active mandates.

Private Equity

The private equity asset class is a floating target of the actual weight (beginning adjusted market value weight) in the portfolio. With the absence of a fixed target, RSIC looks to allocate to private equity by seeking long-term relationships with the best-in-class managers expected to generate superior returns (net of fees) over time. Thus, the actual private equity allocation may vary over time based on both availability of attractive investment opportunities and prevailing market conditions. Private equity strategies include buy-out, venture, growth, distressed, and secondaries.

Equity Options Strategies

Equity options strategies exposure is implemented through a combination of enhanced and active strategies. Enhanced strategies focus on systematic improvements to the index construction. Active strategies utilize quantitative and fundamental analysis to minimize equity drawdown risk, capture the volatility risk premium, and improvements to the management of cash collateral.

Cash & Short Duration

Internally managed short duration and cash accounts are USD denominated securities that may include but are not limited to treasuries, agencies, commercial paper, banker’s acceptances, repurchase agreements, corporate debt securities, and other money market and fixed income securities eligible under South Carolina law. The maximum final maturity of any security purchased for these accounts must be 3 years or less from purchase date. Securities must be rated as investment grade or better by a nationally recognized statistical rating organization at the time of purchase. External managers may be used for short duration mandates. These accounts are USD denominated securities that may include, but are not limited to, U.S. government securities, sovereign and supranational denominated in U.S. Dollars, money market instruments, repurchase agreements, municipal securities, mortgage backed securities, asset backed securities, corporate debt securities, high yield securities, and opportunistic investments in investment grade securities, convertibles, and treasuries. The minimum average credit quality of the mandate should be B+. No securities rated below CCC at time of purchase may be included.

Core Fixed Income

The existing core fixed income portfolio includes investment grade securities across several sectors, including treasuries/sovereign, government-related (agency), corporate, and asset-backed securities. Current implementation features a combination of passive and active mandates.

TIPS

U.S. Treasury bonds that are indexed to inflation in order to protect from the negative effects of rising prices. Current implementation is a passive mandate.

High Yield Bonds/Bank Loans

The credit asset class includes investments in high yield and bank loans. The credit exposure is entirely actively managed.

Private Debt

The private debt asset class is a floating target of the actual weight (beginning adjusted market value weight) in the portfolio. Global banking regulations continue to curtail the aggregate lending activities of the banking sector, thereby creating opportunity for non-bank lenders. This creates meaningful opportunities for institutional investors to capture attractive returns. Staff will continue to focus on larger allocations to its highest conviction managers, with an emphasis on structures that capture lower fees and increase customization.

Emerging Markets Debt

The emerging market debt asset class is a blend of USD-denominated and local market emerging debt securities. The portfolio uses a combination of active and passive strategies.

Global Tactical Asset Allocation

The GAA portfolio invests in three main categories: global tactical asset allocation strategies, risk parity strategies, and other idiosyncratic strategies. The portfolios of GAA managers may be invested in liquid securities and instruments, including but not limited to equities, fixed income securities, bank loans, commodities, futures, swaps, forwards, options, and currencies. GAA manager may use hedged strategies as a part of its implementation. These strategies may employ leverage.

Portable Alpha Hedge Funds

Hedge funds used as the alpha strategy in the portable alpha implementation which are expected to generate uncorrelated alpha while minimizing embedded market beta over time.

Other Opportunistic Strategies

Investments that, while they may not fit into other asset classes, still offer compelling opportunities for the Portfolio. These investments may offer either high returns, diversifying returns, or both. Examples of potential investments include, but are not limited to, commodities, CTAs, and insurance strategies.

Public Real Estate (REITs)

The public real estate portfolio asset class invests in US, long only, equity real estate investment trusts (REIT) and real estate operating companies (REOC).

Private Real Estate

The real estate portfolio asset class is divided into three main strategies: core, value-add, and opportunistic, and encompasses both debt and equity real estate.

Public Infrastructure

Infrastructure investments which are publicly traded. These assets have a tendency to benefit from a rising inflation environment.

Private Infrastructure

Infrastructure investments in private markets. These assets have a tendency to benefit from a rising inflation environment.

3. The assets of the RSIC are invested with a long-term horizon and structured to seek to achieve a diversified portfolio that achieves a rate of return greater than the actuarially assumed rate of return, a rate of return greater than that of the Policy Asset Allocation return while maintaining a similar risk profile, a rate of return for each asset class greater than its benchmark return with a prudent level of risk, sufficient liquidity to pay benefits in a timely manner, and an implementation of the asset allocation in an efficient manner. As of June 30, 2019, the actuarial rate of return is 7.25%.

4. Total Fund Composite returns calculated as "Net Return" are calculated monthly using time-weighted rates of return and reflect the deduction of trading costs and are net of all external and internal investment costs. Returns calculated as "Net-of-External-Cost-Only Return" are calculated monthly using time-weighted rates of return, reflect the deduction of trading costs, are net of external investment costs only, and includes cash that is in the Plan but not available for investment. Returns calculated as "Net Money Weighted Return" are calculated using internal rate of return (IRR) for the fiscal year and reflect the deduction of trading costs and are net of all external and internal investment costs. External investment expenses include management fees, performance fees and carried interest (net of offsets and rebates), and other expenses. Internal investment expenses are all RSIC budgeted expenses which include RSIC compensation, overhead, research and technology services, legal expenses, and consultant fees. Custody costs are paid through income generated from a securities lending program with the custodian bank. All returns reflect the reinvestment of dividends, net of withholding tax, and other earnings. All returns and asset values are calculated and expressed in US Dollars.

5. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

6. RSIC hires external managers and allocates assets to them to manage. As of June 30, 2019 the percent of externally managed assets for the Total Fund was 93.0%. RSIC utilizes an overlay program, managed by an external manager, to efficiently gain passive exposures to manage incremental shifts in broad market exposures and manage risk in an efficient manner using both physical and synthetic securities, including, but not limited to, exchange-traded-funds/notes, equity or fixed income baskets, options, futures, swaps and forward currency contracts. Actual asset allocation weights as of June 30, 2019 include exposures gained through the overlay program. While leverage is inherent in derivative securities, RSIC fully collateralizes these positions. A portable alpha strategy is run in conjunction with the overlay program where the collateral is invested along the risk spectrum of market neutral hedge funds, short duration securities, and cash investments. Leverage may also be present at the manager portfolio level due to the use of derivatives, short positions, and credit facilities.

7. The Total Fund Composite includes all individual portfolios that are combined into one aggregate portfolio. The performance or the combined portfolio reflects the overall mandate of the plan. Because the Total Fund Composite is a single aggregate portfolio for all periods no measure of internal dispersion of annual portfolio returns is presented. Because the Total Fund Composite represents 100% of the assets managed by RSIC, this presentation represents RSIC's list of composite descriptions.

8. The three-year annualized ex-post standard deviation measures the variability of the composite and the benchmark for the 36 month period. This number will not be available until 36 months of compliant history is achieved.