



Ohio Public Employees Retirement System
Investment Objectives and Asset Allocation Policy
Defined Benefit Fund
February 2017

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Revision History

Defined Benefit Fund Policy Established	September 16, 1998
Policy Revised	May 16, 2001
Policy Revised	June 19, 2002
Policy Revised	June 17, 2003
Policy Revised	May 18, 2005
Policy Revised	September 19, 2006
Policy Revised	November 14, 2007
Policy Revised	November 18, 2009

Policy Revised
Policy Revised
Policy Revised
Policy Revised
Policy Revised
Policy Revised
Policy Revised

December 15, 2010
January 18, 2012
March 20, 2013
February 19, 2014
February 18, 2015
January 20, 2016
February 15, 2017

I. SCOPE

This Policy applies to the assets within the Ohio Public Employees Retirement System (“OPERS”) Defined Benefit Fund (“DB Fund”).

II. PURPOSE

This Policy provides the broad strategic investment framework for managing the DB Fund.

III. LEGAL AUTHORITY

The investment powers and fiduciary responsibilities of the OPERS Retirement Board (“Board”) are established by Section 145.11 of the Ohio Revised Code (“ORC”). Section 145.11(A) states, in part:

The members of the public employees retirement board shall be the trustees of the funds created by section 145.23 of the Revised Code. The board shall have full power to invest the funds. The board and other fiduciaries shall discharge their duties with respect to the funds solely in the interest of the participants and beneficiaries; for the exclusive purpose of providing benefits to participants and their beneficiaries and defraying reasonable expenses of administering the public employees retirement system; with care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims; and by diversifying the investments of the system so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so.

OPERS Investment Staff (“Staff”) and others, who are involved in the management of the DB Fund’s assets, are subject to the same fiduciary standards as the Board.

IV. INVESTMENT PHILOSOPHY

The Board believes OPERS’ assets should be managed in a fashion that reflects OPERS’ unique liabilities, funding resources and portfolio size, by incorporating accepted investment theory and reliable, empirical evidence and supports the following principles:

- Asset allocation is the key determinant of return and, therefore, commitments to asset allocation ranges will be maintained through a disciplined rebalancing program.
- Diversification, both by and within asset classes, is the primary risk control element.

- Active management, or the pursuit of returns in excess of benchmarks, entails the possibility of disappointing results over short periods of time. Therefore, assets will be invested with a long-term perspective.
- Passive investment vehicles consist of index funds and derivatives-based strategies that are suitable alternatives to actively managed portfolios, especially in highly efficient markets.

V. INVESTMENT OBJECTIVE

The investment objective of the DB Fund is to support OPERS' mission to provide secure retirement benefits for its members. Meeting this objective necessitates making active decisions about markets in a long-term framework which, by its nature, involves taking reasonable risks. OPERS also seeks to operate effectively and at an appropriate cost.

VI. ASSET ALLOCATION

A. Purpose

The asset allocation establishes a framework for OPERS that has a high likelihood, in the judgment of the Board, of realizing OPERS' long-term investment objective.

B. Targets and Ranges

The Board sets Target allocations ("Targets") to various asset classes that are designed to meet OPERS' long-term investment objectives, and establishes a band of minimum and maximum allowable allocations, or Ranges ("Ranges"), surrounding each Asset Class Target. The purpose of Ranges is to appropriately and cost-effectively balance the Board's Investment Policy with the investment strategies pursued over shorter time periods. The table below sets forth Targets and Ranges for each Asset Class and sub-asset class.

Asset Class	Target Allocation	Range
Public Equity	39%	31 to 47%
U.S. Equity	**	+/- 5%
Non-U.S. Equity	**	+/- 5%
Fixed Income	23%	16 to 30%
Core Fixed	9	6 to 12
Emerging Markets Debt	7	3 to 9
Floating Rate Debt	0	0 to 2
Securitized Debt	1	0 to 2
TIPS	2	1 to 3
High Yield	3	0 to 5
U.S. Treasury	1	0 to 2
Alternatives	31%	22 to 40%
Private Equity	10	5 to 15
Real Estate	10	5 to 15
Hedge Funds	8	4 to 12
Opportunistic	2	0 to 4
Commodities	1	0 to 2
Risk Parity	5%	2 to 8%
GTAA	2%	0 to 4%
Operating Cash	0%	0 to 3%
Total	100%	

** Reset quarterly based on the ratio of U.S. to Non-U.S. market capitalization of the MSCI All Country World - Investable Market Index (“ACWI-IMI”).

In setting Ranges, the following principles are applied:

- The Public Equity allocation has a symmetrical Range equivalent to roughly 20% of its Target rounded to a whole percentage point. Due to the floating nature of the Public Equity allocation, the Range for U.S. and Non-U.S. is +/- 5 percentage points as a proportion of the DB Fund.
- Both the Fixed Income Asset Class and the Core Fixed sub-asset class have a symmetrical Range of 30% from their Target allocations, rounded to a whole percentage point. The allocations to Emerging Markets Debt, Floating Rate Debt, Securitized Debt, TIPS, High Yield, and U.S. Treasury are given wider percentage Ranges for greater flexibility and to accommodate wider market swings.

- The Alternatives Asset Class has a symmetrical Range of 30% from its Target allocation, rounded to a whole percentage point. The Ranges for the sub-asset class allocations within Alternatives are given wider symmetrical ranges to reflect the dominant influence of public market fluctuations on their proportion.
- The Ranges for Risk Parity and Global Tactical Asset Allocation are given wider symmetrical ranges to reflect the dominant influence of public market fluctuations on their proportion.

Exposure from derivatives or the securitization of cash is assigned to the respective sub-asset class for purposes of measuring the sub-asset class allocations stated herein. Operating cash for such purposes as paying benefits or other day-to-day expenses is generally unsecuritized. Unsecuritized cash is limited to a Range of 0% to 3%.

To the extent the actual allocation to the Alternatives Asset Class (except Real Estate) differs from the Target percentage, that difference will be added to, if under, or subtracted from, if over, the Target and Range for Public Equity. For Real Estate, the overage or underage will be applied to the Fixed Income Targets and Ranges in a similar manner.

C. Rebalancing

Staff will ensure conformance with the asset allocation set by the Board through monthly, or more frequent, review. In conducting rebalancing activities, the Board expects Staff to operate under the following principles:

- Staff must initiate rebalancing transactions to bring all percentages to values inside the Ranges or promptly seek Board approval to remain outside the Ranges.
- To implement the investment strategy, Staff will manage the asset allocation nearer to or away from the Targets, but within Policy Ranges. Quarterly performance reports to the Board will also reflect actual allocations and variances from Targets.
- The spirit of this Policy is to implement the investment strategy within the Targets and asset allocation Ranges at a reasonable cost, recognizing that overly precise management of asset exposures can result in transaction costs that are not economically justified.

D. Periodic Review

The Board establishes the asset allocation Targets and Ranges and reviews them annually. Every three to five years the Board will undertake a comprehensive strategic asset allocation review designed to assess the continuing appropriateness of this Policy. Such review will consider an asset-liability study of future benefit payments, liabilities, required funding, the appropriateness of the actuarial interest rate assumption and the prospective funded status of liabilities. It may also include a study of portfolio design for optimal diversification and comparisons with peer practices.

VII. PERFORMANCE OBJECTIVES

A. Defined Benefit Fund

The performance objectives for the DB Fund are to: (1) exceed the return of the Policy benchmark, net of investment expenses; and (2) exceed the actuarial interest rate over a reasonably longer time horizon. The Policy benchmark combines designated market indices for Asset Classes, weighted by asset allocation Targets. The table on the next page contains the benchmark indices for the respective asset classes.

Expectations for outperformance are a function of the projected excess returns for each Asset Class and are aggregated at the Fund level. Actual DB Fund performance is compared to the Policy benchmark return with projected excess returns.

In addition, DB Fund risk-adjusted performance relative to the Policy benchmark return is expected to be competitive with peer funds with similar allocations.

During periods of transition resulting from a change in the Board-approved Targets, the interim target asset allocation and associated benchmarks used to calculate benchmark performance for the DB Fund will be established on a quarterly basis in advance of the subsequent quarter. That target mix will be based on allocations made by Staff and reported to the Board through quarterly performance reports.

B. Asset Classes

Each Asset Class shall be measured relative to its designated benchmark index. It is expected that the active management of individual Asset Classes will provide an investment return in excess of the index, net of expenses.

Asset Class	Benchmark Index
Public Equity	
U.S. Equity	Russell 3000 Index
Non-U.S. Equity	Custom benchmark of the following indices <ul style="list-style-type: none"> ■ 55% MSCI World Index ex U.S. Standard ■ 10% MSCI World Index ex U.S. Small Cap ■ 31% MSCI Emerging Markets Standard ■ 4% MSCI Emerging Markets Small Cap
Fixed Income	Custom benchmark based on the target weights of the underlying sub-asset class allocations
Core Fixed	Bloomberg Barclays U.S. Aggregate Index
Emerging Markets Debt	Custom benchmark of the following indices: <ul style="list-style-type: none"> ■ 50% JP Morgan Emerging Markets Bond Index Global ■ 50% JP Morgan Government Bond Index-Emerging Markets Global Diversified
Floating Rate Debt	Credit Suisse Leveraged Loan Index
Securitized Debt	Non-Agency CMBS component of Bloomberg Barclays U.S. Aggregate Index plus 200 basis points
TIPS	Bloomberg Barclays U.S. TIPS Index
High Yield	Bloomberg Barclays U.S. High Yield Index
U.S. Treasury	Bloomberg Barclays U.S. Treasury Index
Alternatives	
Private Equity	State Street Private Equity Index (“SSPEI”)
Real Estate	Net NFI-ODCE plus 85 basis points
Hedge Funds	Custom benchmark using the HFRI single strategy indices weighted by the target allocations listed in the Annual Investment Plan
Opportunistic	Market value weight of underlying portfolio benchmarks
Commodities	S&P GSCI Total Return Index
Risk Parity	Market value weight of underlying portfolio benchmarks
GTAA	Market value weight of underlying portfolio benchmarks

VIII. RISK MANAGEMENT

The Board ensures adequate risk control through the following means:

A. Diversification

Investments shall be diversified to minimize the impact of the loss from individual investments. In addition to achieving diversification by asset class, careful attention shall be paid to diversification within each asset class and sub-allocation and across managers.

B. Liquidity

Liquidity is carefully managed through adherence to OPERS' Liquidity Policy.

C. Portfolio Guidelines

Public market separate account portfolios, excluding cash and custody accounts which are not enabled for trading, shall operate under written guidelines approved by both Staff and the Investment Advisors ("Advisors") that are designed to ensure the portfolio pursues its return objective within the acceptable risk parameters. Other portfolios shall operate pursuant to their governing documents.

D. Risk Parameters

Staff, in conjunction with Advisors, shall recommend active risk (risk of achieving performance different than the DB Fund benchmark) parameters for the DB Fund to the Board. The Board shall approve active risk parameters as part of OPERS Annual Investment Plan and approve Asset Class risk parameters in the Asset Class Policies. Risk management reports shall be provided periodically to the Board.

E. Compliance Monitoring

Compliance with all elements of this Policy shall be monitored and results of such monitoring shall be reported to the Investment Committee.

IX. ROLES AND RESPONSIBILITIES

The following section outlines the roles and responsibilities for each of the parties involved with executing this Policy. In addition to those activities that are described below, each person involved with this Policy is to act with the same care, skill, prudence, and due diligence under the circumstances then prevailing that experienced investment professionals acting in like capacity and fully familiar with such matters would use in like activities for like aims in accordance and compliance with all applicable laws, rules, and regulations.

The Board will determine the manner in which it fulfills its duties and how duties are delegated to other parties that are identified in this section.

A. OPERS Retirement Board

The Board's authority includes:

1. Asset Allocation

- a) Establishing and modifying the asset allocation Targets and Ranges for the DB Fund
- b) Approving Asset Class Policies
- c) Reviewing this Policy annually which would include making a determination whether or not the Fund is in transition, a period when the Fund is moving toward new target allocations

2. Asset Management

- a) Approving OPERS Annual Investment Plan to manage the investments
- b) Determining delegations of authority in connection with investment management
- c) Ensuring adequate supervision of investment managers
- d) Approving all other Investment related Policies

3. Risk Control and Administration

- a) Ensuring that appropriate Investment Policies are in place
- b) Ensuring that adequate risk controls are in place
- c) Ensuring compliance with all of its Policies and directives
- d) Ensuring that custody and other ancillary investment functions are performed as described in the Policy
- e) Reviewing risk reports and taking appropriate actions when necessary

4. Monitoring and Evaluation

- a) Establishing performance benchmarks and expectations
- b) Monitoring the performance of investments
- c) Evaluating Staff's capability and performance
- d) Retaining Advisors, actuaries and other consultants, as appropriate

B. Investment Committee

The Investment Committee (“Committee”) is responsible for reviewing this Policy and recommending changes to the Board for its approval. In addition, the Committee is responsible for monitoring activities and reviewing reports related to this Policy.

The Committee Chairperson chairs the meetings of the Committee, reviews the agenda and serves as liaison between the Board, Staff, and Advisors between meetings of the Committee or Board. In this capacity, the Chairperson works with the Chief Investment Officer (“CIO”) in establishing the agenda for Committee meetings. If matters come to the attention of the Chairperson that he or she believes are important to communicate to the Board before its next regularly scheduled meeting, the Chairperson has the responsibility to inform the Board Chairperson accordingly.

C. Investment Staff

Staff manages the investments and reports to the Board and Committee.

The Board and Committee expect Staff to take a leadership role in investment management. Recognizing that OPERS operates with a very high standard of care, the Board expects Staff to discharge its fiduciary responsibilities in managing OPERS’ investments. Furthermore, the Board expects Staff to:

- Advise the Board when Staff believes action relative to Investment Policies or implementation is required of the Board.
- Review and approve portfolio guidelines and proposed changes to guidelines.
- Establish and conduct an appropriate process for monitoring OPERS’ investments and implementing the Board’s decisions.
- Assure that this Policy and all other investment-related Policies are reflected in investment manager agreements and/or guidelines, as appropriate.
- Establish, in advance, the interim target asset allocations for the subsequent quarter, which are to be used to calculate benchmark performance for the DB Fund during periods of transition resulting from a change in the Board-approved target asset allocations. Annually, Staff will discuss with the Board the Fund’s transition status including forward plans.
- Inform the Board of any and all matters Staff believes to be sufficiently material to warrant the Board’s attention.
- Operate at all times in the best and exclusive interest of OPERS and in compliance with all applicable laws and Investment Policies.

All members of Staff are accountable to the CIO. The CIO is responsible for all Staff actions relative to the management of OPERS' investments. In this regard, it is the responsibility of the CIO to satisfy himself/herself that all Policies and directives of the Board are implemented.

D. Investment Compliance Department

The Investment Compliance Department ("ICD") is responsible for monitoring compliance with this Policy, including guidelines established pursuant to it. If the ICD determines that an exception to this Policy has occurred, the ICD shall notify Staff, the CIO, the Executive Director and the Committee.

E. Custodian

Ohio's Treasurer of State ("Treasurer") acts as the custodian of OPERS as specified in Section 145.26 of the ORC. The Treasurer may employ sub-custodians to perform certain functions.

F. Investment Advisors

The Board may appoint Advisors unaffiliated with OPERS to assist with the investment program. These Advisors will be appointed by the Board and shall be responsible to the Board. Such Advisors shall perform functions established through contractual agreements that may include:

- Advising the Board in the management of OPERS' investments.
- Evaluating OPERS Annual Investment Plan and investment proposals that come before the Board.
- Reviewing and approving portfolio guidelines and proposed changes to guidelines, which include the benchmarks.
- Monitoring OPERS' investments, internal investment activities and external managers.
- Reporting independently to the Board on the performance of OPERS' investments.
- Conducting periodic and special studies on behalf of the Board.
- Researching, identifying, and evaluating investment managers.
- Assisting and supporting Staff in various projects.

G. Actuary

The Board retains an actuary for the purpose of forecasting asset and liability growth and the many complex factors included in estimating future pension costs. These factors include, but are not limited to, interest rates, inflation, investment earnings, mortality rates and employee turnover. These actuarial assumptions are then used to forecast uncertain future events affecting OPERS. The actuary shall be held to the highest standards and shall provide periodic reports on the actuarial valuation of OPERS, and shall provide recommendations to the Board including, among other things, the estimated level of contributions necessary to fund benefits as specified in Section 145.22 of the ORC. The Board shall consider review of the asset liability study approximately every five years.

H. Investment Managers (Internal and External)

The primary responsibility of each investment manager is to invest assets in accordance with written guidelines which reflect this Policy and other investment-related Policies, as appropriate. Accordingly, investment managers are responsible for determining the best method for implementing investment strategy. The specific duties and responsibilities of each investment manager are as follows:

- Managing the assets of the DB Fund under their supervision in accordance with the guidelines and objectives contained within their guidelines
- Exercising full investment discretion in regards to buying, managing and selling assets within the guidelines to achieve the objectives
- Communicating with Staff and the Advisors, in writing, regarding all significant changes pertaining to the assets it manages or the firm itself in a timely manner

The Board expects the investment managers to use the same care, skill, prudence, and due diligence under the circumstances then prevailing that experienced investment professionals acting in like capacity and fully familiar with such matters would use in like activities for like aims in accordance and compliance with all applicable laws, rules, and regulations.

X. ANNUAL INVESTMENT PLAN

Staff shall present to the Board for its consideration a proposed OPERS Annual Investment Plan. The principal functions of the Annual Investment Plan are to:

- Describe key forward asset management characteristics for the DB Fund and the principal Asset Classes which include but are not necessarily limited to, Targets and Ranges, benchmarks, investment strategy, and strategies concerning utilization of active and index management.

- Specify expected excess (active management) return and risk, provisions for risk control and investment expense.
- Clarify delegations of authority by the Board to Staff for various aspects of investment management.
- Identify resource (staffing and budgetary) requirements.
- Describe key initiatives for the year.

The Annual Investment Plan is the principal, although not exclusive, vehicle by which Staff will describe planned asset allocation and investment strategies with related performance benchmarks as well as new strategies and a general framework to support the need for new or replacement portfolios, managers, or Advisors.

XI. MONITORING AND REPORTING

The following reports will be reviewed with the relevant committee of the Board to ensure monitoring and compliance with this Policy:

A. Monthly

Review of asset allocation relative to Targets – Investment Compliance Staff

Report on compliance – Investment Compliance Staff

B. Quarterly

Performance report – Advisors and Staff

Report on risk – Staff

C. Annually

OPERS Annual Investment Plan – Staff

D. Periodically

Additional reports as needed