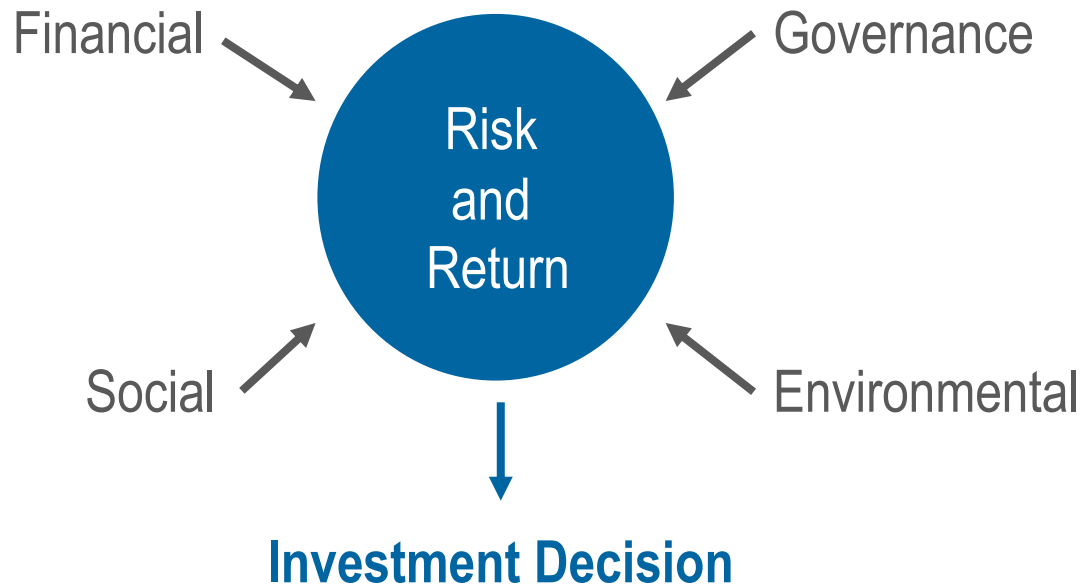


ESG Integration into the Investment Process

January 19, 2016

ESG Integration

Integrate ESG risk and opportunity considerations into the investment decision-making process



Investment Beliefs Support Integration

2 A long time investment horizon is a responsibility and an advantage

Extract from the sub-beliefs:

Long time horizon requires that CalPERS:

- Encourage investee companies and external managers to consider the long-term impact of their actions
- Favor investment strategies that create long-term, sustainable value and recognize the critical importance of a strong and durable economy in the attainment of funding objectives

Investment Beliefs Support Integration

- 3 CalPERS investment decisions may reflect wider stakeholder views, provided they are consistent with its fiduciary duty to members and beneficiaries

Extract from the sub-beliefs:

- CalPERS primary stakeholders are members/beneficiaries, employers, and California taxpayers as these stakeholders bear the economic consequences of CalPERS investment decisions

Investment Beliefs Support Integration

4 Long-term value creation requires effective management of three forms of capital: financial, physical and human

Extract from the sub-beliefs:

- Governance is the primary tool to align interests between CalPERS and managers of its capital, including investee companies and external managers
- CalPERS may engage investee companies and external managers on their governance and sustainability issues, including:
 - Governance practices, including but not limited to alignment of interests
 - Risk management practices
 - Human capital practices, including but not limited to fair labor practices, health and safety, responsible contracting and diversity
 - Environmental practices, including but not limited to climate change and natural resource availability

Physical ≈ Environmental
Human ≈ Social
Financial ≈ Governance

Investment Beliefs also inform how we integrate

7 CalPERS will take risk only where we have a strong belief we will be rewarded for it

Sub-beliefs:

- An expectation of a return premium is required to take risk; CalPERS aims to maximize return for the risk taken
- Markets are not perfectly efficient, but inefficiencies are difficult to exploit after costs
- CalPERS will use index tracking strategies where we lack conviction or demonstrable evidence that we can add value through active management
- CalPERS should measure its investment performance relative to a reference portfolio of public, passively managed assets to ensure that active risk is being compensated at the Total Fund level over the long-term

Investment Beliefs also inform how we integrate

8 Costs matter and need to be effectively managed

Extract from the sub-beliefs:

- CalPERS will balance risk, return and cost when choosing and evaluating investment managers and investment strategies
- When deciding how to implement an investment strategy, CalPERS will implement in the most cost effective manner

Investment Beliefs also inform how we integrate

- 9 Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error

Extract from the sub-beliefs:

- As a long-term investor, CalPERS must consider risk factors, for example climate change and natural resource availability, that emerge slowly over long time periods, but could have a material impact on company or portfolio returns

Investment Beliefs also inform how we integrate

10 Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives

Sub-beliefs:

- Diversity of talent (including a broad range of education, experience, perspectives and skills) at all levels (Board, staff, external managers, corporate boards) is important
- CalPERS must consider the government agency constraints under which it operates (e.g., compensation, civil service rules, contracting, transparency) when choosing its strategic asset allocation and investment strategies
- CalPERS will be best positioned for success if it:
 - Has strong governance
 - Operates with effective, clear processes
 - Focuses resources on highest value activities
 - Aligns interests through well designed compensation structures
 - Employs professionals who have intellectual rigor, deep domain knowledge, a broad range of experience and a commitment to implement CalPERS Investment Beliefs

Balancing the Investment Beliefs

Belief #3 (stakeholder views) and Belief #7 (risk)

Belief #2 (long time horizon) and Belief #9 (risk is multi-faceted)

Belief #4 (value creation) and Belief #8 (costs matter)

The focus of this panel is on what we've done to integrate

Investment Belief #10

Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives



INVO 2020 Vision

Refined Strategic Objectives

Better alignment with goals of the broader organization

New Mission and Vision statements

More active Liquidity management



2015-2016

Mission

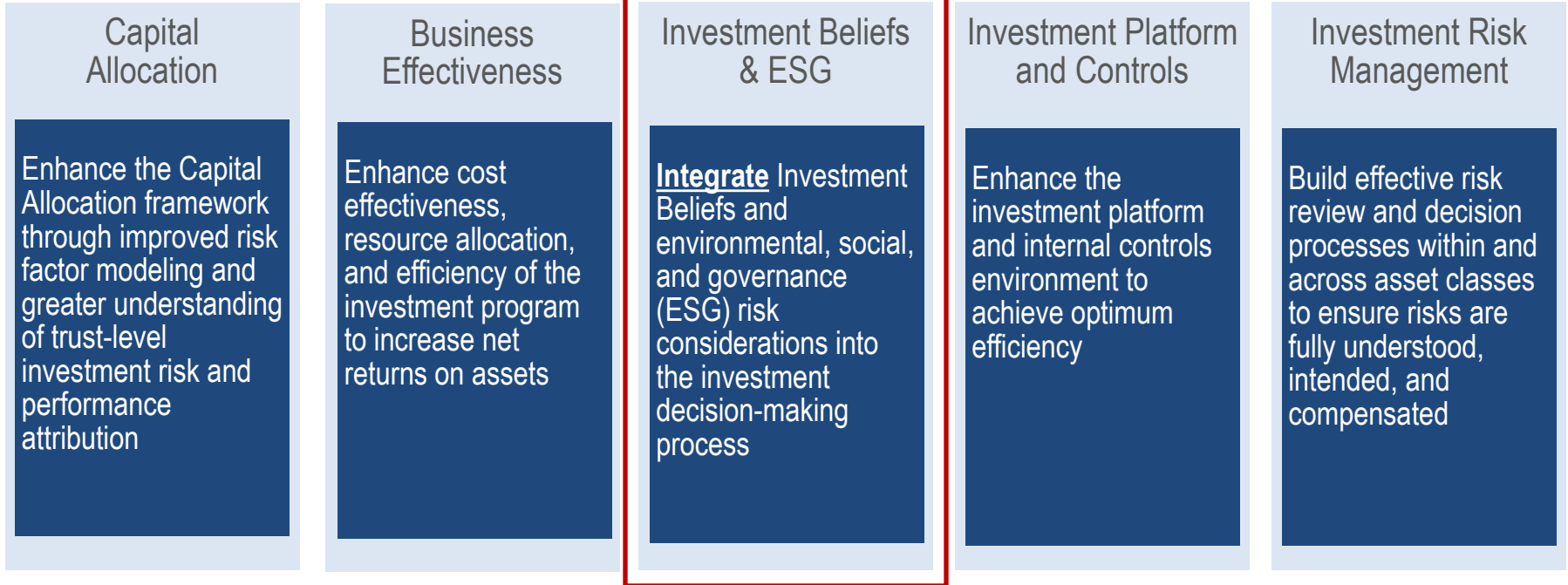
Manage the CalPERS investment portfolio in a **cost-effective, transparent** and **risk-aware** manner in order to generate returns to pay benefits.

Vision

- The Investment Beliefs and CalPERS Core Values are the guiding principles underlying our investment decisions.
- We operate with a focus on **repeatable, predictable, and scalable** portfolios and practices.
- We seek **alignment of interests** with our primary stakeholders, our business partners, and ourselves.
- We use clearly articulated **performance, risk, and cost metrics** to evaluate our value-add to the funds.
- Our investment and business activities are supported by a **solid platform of effective risk management and controls**.



2015-17 Roadmap Overview



- **5** Strategic objectives that support INVO's Mission, Vision, CalPERS' Mission, and Core Values
- **36** Initiatives in progress
- Collaborative, cross asset class/program area effort: **6** Executive Sponsors nominated **26** Project Leads who chose **130** Team Members



2015-17 Initiatives Addressing Operating Model Risks

Investment Strategy Group (ISG) Restructure Initiative:
Improve the understanding and ownership of Trust-level investment risk and performance decisions

Trust-Level Risk and Attribution

Ensures that investment risks are intended, understood, and compensated



CIO, COIO, MIDs



Portfolio Allocation

Provides organized approach to making asset class rebalance and tactical position decisions



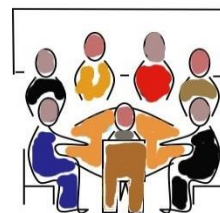
Governance and Sustainability

Ensures that ESG risk considerations are integrated into the investment-decision making process



Trust-Level Investment Review

Provides a trust-level decision process and framework for the review of non-core programs, business models, assets and investments



Manager Expectations Project Goal

FROM	TO
<p>Varied understanding, interpretation and integration of sustainable investment considerations with little clarity given to internal staff or external managers on how sustainability considerations will or should be factored into manager selection, contracting or monitoring.</p>	<p>Asset classes have clear and coherent processes, with the appropriate flexibility and recognition of differences among strategies and managers, for integrating sustainability considerations throughout the lifecycle of the relationship with internal and external managers.</p>

Utilize common core elements for manager expectations across the fund:

Manager Selection

- All asset classes have a manager selection process that involves:
 - Requesting and reviewing prospective managers' ESG/Sustainable Investment policies
 - Asking asset class specific ESG questions of prospective managers
 - Factoring results of the review of a potential manager's policies and responses to ESG questions into the investment decision-making process

Utilize common core elements for manager expectations across the fund:

Contracting

- Asset class expectations include a contracting section with example language on the right:

Monitoring & Management

- Each asset class has a monitoring process with specified frequency and tools utilized where available

“...seeks to promote greater alignment with its external managers by establishing, where possible, relevant and effective, the following items in contracts:

- Managers have, or will commit to have, an investment process which incorporates an assessment of relevant long-term Sustainable Investment or ESG factors;
- Managers will incorporate relevant ESG factors and Sustainable Investment activities into reporting.”

Integration Highlights

Differs by asset class, based on business model and portfolio characteristics

Total Fund

- Manager Expectations
 - Carbon Footprint
 - Governance & Sustainability Subcommittee of the ISG
 - ESG Sustainability Research
 - Global Peer Exchange
-

Global Fixed Income

- Integrate ESG risk factors into portfolio management process
 - SASB (Sustainable Accounting Standards Board) material carbon disclosures
 - Quantitative tools to assess issuer ESG risk factors
-

Global Equity

- Enhanced Focus List
 - HSBC Climate Change Strategy
 - Quantitative tools to assess ESG risk factors
-

Integration Highlights (continued)

Differs by asset class, based on business model and portfolio characteristics

Private Equity

- ESG incorporation into due diligence and documentation for review at PE IRC
 - PE CleanTech investments
 - Application of policy on privatization
 - Fee and performance transparency
-

Real Assets

- Separate account contracts incorporating sustainable investment requirements
 - Core Real Estate managers are members of Greenprint
 - Responsible Contractor Program (RCP) Policy
 - Clean Power Research
-

Public Markets

Lou Zahorak, Global Fixed Income

Tim Misik, Global Equity

ESG Integration | Global Fixed Income

Manager Expectations Pilot

- Manager Selection
 - Include ESG questions in due diligence questionnaire
 - Policies, procedures, portfolio construction process, litigation experience
 - Survey CalPERS external managers for ESG Integration Strategy
- Measuring and Monitoring
 - Survey Investment Management firms on ESG Integration progress
 - Research risk of stranded assets and regulation for CalPERS debt investments

ESG Integration | Global Fixed Income

Portfolio Construction Considerations

- Utilize quantitative tools to assess issuer ESG risk factors
 - Corporates - MSCI ESG Ratings
 - Sovereigns
 - International Finance Corp – Ease of Doing Business Index
 - World Bank - GINI Coefficient Index, Heritage Foundation
 - Open Markets and Intellectual Property Rights Index
- Evaluate Green Bond new issues for portfolios
- Review issuer exposures to MSCI ESG ratings
- Assess portfolio exposure to and economic impact of:
 - Regulation (EPA's proposed Clean Power Plan)
 - Legislation (California Legislature's Coal mining investment) in support of Total Fund analysis

ESG Integration | Global Fixed Income

Industry Best Practices

- Participate at Senior Leadership of Fixed Income Forum and Credit Roundtable
 - collaborate and lobby for market reforms and best practices in the bond market
- Participate at U.S. Treasury Department Roundtable
 - Revival of the Private Label Security mortgage market
- Work with Regulators
 - Commodity Futures Trading Commission (CFTC) hearings regarding benchmarks and derivatives, LIBOR
 - ICE Benchmark Administration (LIBOR Administrator) input on key changes to LIBOR
- Collaborate with Global Governance team on ESG Integration
- SASB (Sustainable Accounting Standards Board) material carbon disclosures for different industry groups

ESG Integration | Global Equity

Manager Expectations Pilot

- Manager Selection
 - ESG scoring integrated into external manager selection process
 - Policies, procedures, portfolio construction process, litigation experience
- Contracting
 - Updated External Manager Guidelines
 - All managers provided CalPERS Global Governance Policy and CalPERS Investment Beliefs
 - All investments must adhere to CalPERS Global Governance Policy
 - Managers commit to assessment and incorporation of ESG factors where relevant
- Measuring and Monitoring
 - Measure ESG exposures and risks in aggregate & individual GE portfolios
 - Carbon Footprint
 - Completed PRI assessment
 - Perform annual review and update of manager practices

ESG Integration | Global Equity

Portfolio Construction Considerations

- Utilize quantitative tools to assess ESG risk factors
- Quantitative identification of return and risk drivers is complex and not obvious given the breadth and depth of the aggregate Global Equity portfolio

Industry Best Practices

- Survey of managers for ESG best practices, framework development, and integration
- Develop best practices for internally managed strategies
- Collaborate with Global Governance team on ESG Integration
- Continued involvement in evolution of industry-wide ESG related processes

ESG Integration | Global Equity

Other Highlights

- Enhanced Focus List
 - Engagement with selected Global Equity overweight securities (international expansion)
 - Top 100 GE Global Equity overweights as candidates
 - Collaborate with external experts on targeted engagement
- ESG Investments
 - HSBC Climate Change Strategy
 - Emerging manager ESG-focused strategy

Private Markets

Christine Gogan, Private Equity
Beth Richtman, Real Assets

ESG Integration | Private Equity

Manager Expectations Pilot

- New Investments
 - ESG questions included in due diligence questionnaire
 - ESG findings included in final due diligence report
 - ESG assessment report included in co-investment due diligence as applicable
- Portfolio Monitoring
 - ESG issues documented in periodic meeting notes prepared for review at PE IRC
 - For top managers, PE staff inquire about ESG policies and issues at annual Limited Partners Advisory Committee (LPAC) meetings
 - Majority of largest managers have an ESG policy; working with remaining managers

ESG Integration | Private Equity

Benchmarking / Industry Best Practices

- Active engagement with UN PRI
- Active engagement with International Limited Partners Association (ILPA)
- Collaborate with Global Governance team on ESG Integration

Other Highlights

- PE CleanTech investments
- Application of policy on privatization
- Fee and performance transparency

ESG Integration | Real Assets

Manager Expectations Pilot

- Infrastructure separate account contracts incorporate ESG requirements
- New infrastructure investment opportunities include ESG risk matrices in advanced review
- ESG diligence matrix for Real Estate under development
- Discussion of best Sustainability Practices of managers and assets

Benchmarking / Industry Best Practices

- Founding member of the GRESB-Infrastructure
- Collaborate with Global Governance team on ESG Integration
- Active with Greenprint for Real Estate since 2011

ESG Integration | Real Assets

Other Highlights

- Clean Power Research:
 - Assessing renewable power as a strategic investment opportunity
 - Researching/monitoring developments regarding distributed energy resources (DER) to identify opportunities and risks for Real Assets investments
 - Evaluating energy efficiency and clean energy sourcing improvements
- Responsible Contractor Program (RCP) Policy

Cross Asset

Alison Li, Asset Allocation and Risk Management
Kit Crocker, Investment Compliance and Operational Risk

Portfolio Tilting

Objective

- Active return from differential weights

Risks

- Potential underperformance versus general benchmark
- Exposure to known or unknown risk factors

Challenges

- Performance impact versus investment capacity
- Measurement of ESG factors
 - Definition
 - Inclusiveness
 - Accuracy
- Portfolio Construction across different market segments and strategies

Alternatives to Portfolio Tilting

Integration

- Manager expectations pilot on ESG for the Total Fund

Engagement

- Engage companies
 - Support director campaigns
 - File shareholder proposals
 - Meet with executives and Boards
- Take the debate further
 - Risk management
 - Capital expenditure
 - Return on equity
 - Board accountability

Advocacy

- Support regulation

INVO 2015-17 Roadmap Initiative #19

ESG Sustainability Research

- Research focused on the investor-perspective, including the integration of ESG tools and analytics into the investment decision-making process
- Guidance from Governance & Sustainability Subcommittee of the ISG
 - Composed of cross asset class expertise

ESG Integration | Investment Compliance and Operational Risk (ICOR)

Prohibited Securities Lists

- Legislative or Board directives
 - Social considerations – e.g., Tobacco, Firearms, Iran/Sudan
- Divestment Policy compliance transitioned to ICOR in 2015
- Centralized list of targeted companies
- Restrictions implemented in CalPERS trading systems and monitored by ICOR

Manager Selection Rapid Results (2014)

- ESG questions added to asset class due diligence questionnaires
- ESG considerations added to asset class Manager Assessment Tool (MAT)
- Foundation of manager expectations pilot across asset classes

ESG Integration | Investment Compliance and Operational Risk

Governance & Sustainability Subcommittee

- Represent Investment Policy Team as “eyes & ears” of compliance
- Monitor intersection with Divestment Policy compliance
- Embedded “watchdog” around fiduciary responsibilities and issues

Investment Policy – Oversight & Monitoring

- Policy represents Board’s direction to staff on all investment risks, including ESG
- Program areas recommend content
- ICOR administers & does compliance testing

ESG Integration | Fiduciary Duty Considerations

Newly Adopted Global Governance Principles

- Contemplate ESG integration by internal/external managers
- Must be consistent with Board's fiduciary duties

Divestments/Portfolio Tilts

- Current evidence on reward to risk is not conclusive
- Most CalPERS divestments have resulted in reduced investment performance
- Engagement is our preferred path to long term, meaningful improvement in ESG