Market Performance:
2023 YTD* vs. 2022 Calendar Year

Equities, fixed income, oil, and commodities are broadly positive YTD. Only Chinese equities and U.S. Treasuries are negative YTD.

All returns are presented in unhedged USD terms

*YTD as of 9/14/2023 (CPI-U YTD as of 8/31/2023)
China’s Economy

China’s GDP as % of United States’s

Date of forecast:
- Apr 1st 2023
- Aug 23rd 2023

Source: Goldman Sachs

China, property sector, contribution to GDP growth*, percentage points

Source: Goldman Sachs

*Includes the impact on suppliers, consumers and government
China’s Economic Troubles Impact the World
China’s economic troubles impact the whole world

Americans’ View of China

Percent of Americans who have a favorable or unfavorable opinion of China

Source: Pew Research Center, Global Attitudes Survey 2011-2023
Correlation Between Equities and Fixed Income

Correlation between S&P 500 Index and ICE U.S. Treasury 7-10 Year Bonds Index. Correlation calculated on a 50-day rolling basis.

Returns data through 9/14/2023
Global Equity Market Volatility

MSCI ACWI Intra-Year Declines vs. Calendar Year Returns
Despite average intra-year decline of 15.8%, annual returns were positive in 22 of 30 years.
Concerns about the banking system, inflation, rising rates, and the war in Ukraine continue to cloud the macro backdrop.

Federal Funds Rate rose 525 bps since March 2022 (from near zero)
Inflation Estimates

Economist surveys point to a continuing reduction in inflation trends over the next 18 months

U.S. CPI With Consensus Estimates (YoY Change)

Source: Bureau of Labor Statistics

U.S. Consumer Price Index

2023 YTD through 9/14
## 2023+ Projects: Investments/Collaborative

<table>
<thead>
<tr>
<th>Project</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unitization</strong></td>
<td>PERA has engaged Callan to assist with analyzing the feasibility of unitizing the entire defined benefit plan. Callan is reviewing custodian and recordkeeper capabilities as well as PERA’s plan structure and cash activity.</td>
</tr>
<tr>
<td><strong>Modernization of Investment Systems</strong></td>
<td>PERA is in contract negotiation for FundHub, a managed service solution from SS&amp;C for private market investments. We are implementing Snowflake, a cloud data warehouse solution, that will improve data processing times and retention while addressing technical debt. Ongoing upgrades and software evaluations are in process and the team remains focused on efficient use and optimization of technology.</td>
</tr>
</tbody>
</table>
Investment Activities

• Hired a Real Estate Associate
• Retirement of the Director of Investment Operations
• Began the 2023 Investment Stewardship Report campaign
• Legislative research requests
• Aon staffing changes
The Broncos Show

With Guest Host
Russell Wilson
Questions?
APPENDIX
# Asset Allocation Policy

**Policy**

_Asset class weights will be within permissible ranges_

**Status**

_All asset class weights within permissible ranges_

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>2023 Policy Benchmark Weight</th>
<th>Actual Weight* (June 30, 2023)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>54.0%</td>
<td>55.3%</td>
<td>48% - 60%</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>23.0%</td>
<td>18.3%</td>
<td>18% - 28%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>8.5%</td>
<td>8.9%</td>
<td>4% - 13%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>8.5%</td>
<td>11.0%</td>
<td>4% - 13%</td>
</tr>
<tr>
<td>Alternatives</td>
<td>6.0%</td>
<td>6.3%</td>
<td>0% - 12%</td>
</tr>
<tr>
<td>Cash/Short Term**</td>
<td>0.0%</td>
<td>0.3%</td>
<td>0% - 3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
</table>

* Transitional cash remains within respective asset classes
** Includes Cash Overlay
**Active Risk Policy**

**Policy**
Active risk within public market asset classes (i.e., Global Equity and Fixed Income) and the total public markets portfolio will not exceed maximums.

**Status**
Active risk levels are within policy limits.

---

### Active Risk

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Five-Year Tracking Error in Basis Points 31-Aug-23</th>
<th>Active Risk Policy Maximum in Basis Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>174</td>
<td>225</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Marketable Securities</strong></td>
<td>140</td>
<td>150</td>
</tr>
</tbody>
</table>

---

*Active risk measurement was changed from trailing three years to trailing five years as of January 2020*
<table>
<thead>
<tr>
<th>ASSET CLASS</th>
<th>STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>Portfolio retains higher quality bias. No material sector or geographic overweights or underweights relative to the benchmark.</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>The portfolio is biased to be overweight spread product, take on limited duration risk, and generate the majority of outperformance from security selection and asset allocation. Short term dislocations may cause volatility in performance; however, long term the portfolio is expected to outperform the benchmark.</td>
</tr>
<tr>
<td>Private Equity</td>
<td>Continuing to build out 2023 vintage with high quality opportunities, particularly in the buyout and growth categories. Portfolio management and liquidity options are being evaluated across the PE portfolio.</td>
</tr>
<tr>
<td>Real Estate</td>
<td>Real Estate fundamentals and supply dynamics remain strong in Industrial and Multifamily while traditional Office and Retail continue to tell a mixed story with winners and losers in terms of tenant demand. Cost of Real Estate debt is headed higher leading to rising capitalization rates. General economic concerns coupled with material shortages beginning to impact real estate values. Focus remain on durable well leased properties in high employment markets.</td>
</tr>
<tr>
<td>Alternatives</td>
<td>Real assets including infrastructure, agriculture and timber offer attractive yields in a period of higher inflation. As older private debt issues reach maturity over the next two years, there will be demand for special situations capital which can provide flexible capital solutions in a higher interest rate environment. Existing distressed managers have substantial dry powder available to pursue value transactions in a risk off environment. However, outside of the banking sector, significant distress has not yet materialized.</td>
</tr>
</tbody>
</table>