Market & Portfolio Update

Amy C. McGarrity
Interim Executive Director/Chief Investment Officer
January 19, 2024
Market Performance: 2023 vs. 2022

Equities (non-China) and fixed income were positive while commodities and oil turned negative. Nearly all benchmarks reversed course from the prior year (China was negative in both 2022 and 2023).

All returns are presented in unhedged USD terms
* CPI-U YTD as of 11/30/2023
Correlation Between Equities andFixed Income

Correlations between stock and bond returns remain positive, after a brief normalization in the first half of 2023.

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 1/17/2024.
Global Equity Market Volatility

MSCI ACWI Intra-Year Declines vs. Calendar Year Returns

Despite average intra-year decline of 16%, annual returns were positive in 22 of 30 years.
S&P 500 Index Movers

S&P 500: Percentage of Stocks that Outperformed the Index

Source: Bloomberg

Calendar Year Total Returns 1990-2023

Median = 49%
Magnificent Seven Yearly Returns

Source: Bloomberg
Concerns about inflation, interest rates, and the wars in Israel and 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.

Source: Bureau of Labor Statistics
Fiduciary Duty
Right to vote is an asset of the Plan

The Board’s Proxy Voting Policy supports management of plan assets in pursuit of long-term risk-adjusted returns
2024 Proxy Voting Policy (PVP) Review – Proposed Timeline

January 26 – February 9
- Trustee Survey open
- Educational Materials and Survey distributed January 26
- Survey responses due February 9

Mid March to early April
- Staff incorporate input from IC into redlined PVP

Mid May to early June
- Additional follow-up (as needed)
- Staff finalize redlined PVP

March 14
- IC Meeting – Kickoff Presentation
- 2023 Proxy Voting Report
- Survey responses and analysis
- Staff recommendations/redlined PVP
- IC discussion/Q&A

April 12 – May 10
- Trustee comment period for redlined PVP
- Trustee redline responses due May 10

June 20
- IC Meeting – present updated PVP
- IC approval or further guidance

Review proxy voting and PERA’s policies before the survey: PERA’s Proxy Voting
<table>
<thead>
<tr>
<th>Project</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unitization</td>
<td>PERA is collaborating with Callan and Northern Trust to white board potential unitized structures.</td>
</tr>
<tr>
<td>Modernization of Investment Systems</td>
<td>PERA’s project management teams have begun the design process and initial steps for implementation of FundHub, a managed service solution from SS&amp;C for private market investments, as well as Athena, a data warehouse and reporting solution. PERA continues to build out our Snowflake environment and has connected three vendors.</td>
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Investment Activities

• Alternatives issuing an RFP for investment research services

• We survived 2023, on to 2024!
Questions?
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* (Dec 31, 2023)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>54.0%</td>
<td>54.7%</td>
<td>48% - 60%</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>23.0%</td>
<td>18.8%</td>
<td>18% - 28%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>8.5%</td>
<td>8.8%</td>
<td>4% - 13%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>8.5%</td>
<td>10.8%</td>
<td>4% - 13%</td>
</tr>
<tr>
<td>Alternatives</td>
<td>6.0%</td>
<td>6.5%</td>
<td>0% - 12%</td>
</tr>
<tr>
<td>Cash/Short Term**</td>
<td>0.0%</td>
<td>0.4%</td>
<td>0% - 3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td></td>
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</table>

* December 2023 weights are preliminary. 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-Dec-23</th>
<th>Active Risk Policy Maximum in Basis Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equity</td>
<td>170</td>
<td>225</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>Total Public Markets</td>
<td>135</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>
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<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>Initiating work on budget and plan for 2024 vintage. PE market activity and fundraising noticeably slowing. Reviewing select new Investment opportunities with proven sponsors in addition to reups with existing managers.</td>
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<tr>
<td>Real Estate</td>
<td>Weakening real estate fundamentals and increased cost of borrowing has recently led to declining valuations. Capitalization rates are rising yet transaction volume has slowed substantially in the near term. Portfolio overweight to industrial and multifamily has been strong yet appears to be reversing course due to both capital and economic headwinds.</td>
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<tr>
<td>Alternatives</td>
<td>Real assets including infrastructure, agriculture and timber offer attractive yields in a period of higher inflation. Certain asset-backed credit strategies, such as leasing also appear to offer good value, as banks continue to retrench from traditional finance activities. 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 for refinancing or restructing debt. Existing distressed managers have substantial dry powder available to pursue value transactions in a risk off environment.</td>
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