PERFORMANCE REVIEW: BIG MOVES, SMALL CHANGE

Last quarter’s market turmoil affected funded status for the average public pension only marginally. The ratio of the average plan’s assets to its liabilities slipped 1% on a market value basis to end the quarter at 71%. (Our calculation takes routine expenses and contributions into account but doesn’t estimate any extraordinary contributions made to compensate for deteriorating funded status.)

On an actuarial basis, which smooths over a five-year period the difference between a plan’s estimated returns on its portfolio assets and its actual returns, the average plan’s funded status didn’t change at all, ending the period where it began, at 74%.

The domestic stock indexes rode the crest of a March rally to recover all they had lost in the extreme volatility that greeted the new year, and then some, finishing ahead 1.3%. The average plan’s real estate allocation did better, ticking up 2.5%, and the bond market, profiting from the quarter’s early flight to quality, did better still, advancing 3.3%. The average plan’s allocation to alternatives and international stocks fared poorly enough to cancel out the modest gains in the larger allocations, however.

Even with asset performance flat overall, routine contributions would have added 0.8% to assets on the ledger on a market value basis. Yet by themselves, the contributions could not offset the net effect of benefit payments plus the accrual of interest and service costs, which combined reduced funded status by 2.1%. Accounting for all factors, the net effect was a change of 1.3% in accounting funded status over the quarter.

MARKET RETURNS

<table>
<thead>
<tr>
<th>Asset allocation</th>
<th>Allocation* (%)</th>
<th>Return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015</td>
<td>1Q16</td>
</tr>
<tr>
<td>Domestic equity</td>
<td>28.0</td>
<td>1.4</td>
</tr>
<tr>
<td>International equity</td>
<td>21.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Fixed income</td>
<td>24.4</td>
<td>-0.3</td>
</tr>
<tr>
<td>Real estate</td>
<td>9.3</td>
<td>11.6</td>
</tr>
<tr>
<td>Private equity</td>
<td>9.8</td>
<td>-5.6</td>
</tr>
<tr>
<td>Diversified hedge funds</td>
<td>6.8</td>
<td>-1.8</td>
</tr>
<tr>
<td>Total portfolio</td>
<td>100.0</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: J.P. Morgan Asset Management.
*Allocation as of September 30, 2015.
**Funded status calculation methodology**

Our funded status tracker traces the ratio of current asset values to the present value of future liabilities for the average plan. It shows both market funded status, based on actual prices, and actuarial funded status, a statutory calculation used to determine funding requirements.

We have derived our estimate of the market value of the average plan's assets from the U.S. Census Bureau's Survey of Public Pensions, of June 30, 2014, carried forward by quarterly benchmark returns. We derive the market value of assets from the benchmark prices for each asset class on the last day of the quarter and add in contributions and subtract benefit payments and administration costs based on two-year trends observed in the U.S. Census data.

We estimate the actuarial value of assets based on average actuarial funded status as reported in the public pension database maintained by the Center for Retirement Research at Boston College. We project the actuarial value of assets by smoothing the difference between actual returns and a plan's expected returns over five years, gradually discounting the difference if actual returns exceed expectations or amortizing it if returns fall short of expectations.

Our estimate of liability values comes from the U.S. Census Bureau survey. It takes into account quarterly service costs, interest costs and benefit payments. The service and interest costs reflect two-year average trends observed in data from the Center for Retirement Research.

We weight total portfolio returns for our average plan's investment allocations according to survey data reported on September 30, 2015 by Pensions & Investments. The average plan allocation falls into three broad asset classes (for which we show the corresponding index in parentheses): 1

- **Equities**, which we subdivide into domestic U.S. (S&P 500 Total Return Index) and international (MSCI EAFE Total Return Index)
- **Fixed income**, which brings together global aggregate bonds (Barclays Global Aggregate Total Return Index); U.S. domestic aggregate bonds (Barclays U.S. Aggregate Total Return Index); U.S. cash (Barclays 1 - 3 Month US Treasury Bill Index); Treasury Inflation-Protected Securities (Barclays US Treasury TIPS 5 - 15Yr); high yield debt (Barclays US Corporate High Yield Total Return Index); and emerging market debt (Barclays EM USD Aggregate Index)
- **Alternative investments not usually traded on public markets**—real estate (represented by two-year average returns of the FTSE NAREIT US Real Estate Index), private equity (two-year moving average returns of the Dow Jones U.S. Micro-Cap Total Stock Market Total Return Index) and hedge funds (HFRI Fund Weighted Composite Index)

1 The passive index returns do not include investment management fees or manager alpha.

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**Funded status attribution glossary**

- **Funded status (market value of assets)**: The ratio of the market value of assets to the present value of actuarial accrued liabilities
- **Portfolio**: The net effect on funded status due to portfolio performance
  - **Equities**: Domestic and international equities
  - **Alternative investments**: Real estate, private equity and diversified hedge funds
  - **Fixed income**: Global aggregate bonds, U.S. cash, U.S. core bonds, TIPS, high yield and emerging market debt
- **Contributions**: The net effect on funded status due to employer and employee contributions
- **Benefit payments**: The net effect on funded status due to benefit payments to participants
- **Interest and service costs**: The net effect on funded status due to liability interest cost and service cost. Interest cost is the increase in liability value associated with the passage of time during the period. Service cost is the present value of the projected retirement benefits earned by plan participants over the current period.
- **Funded status impact due to smoothing**: The difference between funded status calculated using the market value of assets and using the actuarial value of assets, which represent smoothed values.
- **Funded status (actuarial value)**: The ratio of the actuarial value of assets to the present value of actuarial accrued liabilities.

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The Voice for Public Pensions

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Asset Management
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