### **FASB ROA Assumption** As of December 2012

# **Background**

The FASB expected return on assets (ROA) assumption is used by the Plans' actuary (AonHewitt) in its determination of the annual retirement benefit expense projections. This assumption is a long-term assumption and as such should not be adjusted frequently. The assumption should be monitored annually and changed if the observed returns deviate significantly from the current assumption, or if certain conditions change.

The current (FY 2011) ROA assumption for the Pension Fund is 7.75% and 8.00% for the Retiree Benefits Plan.

The process Trust Fund Investments has used for the past several years in evaluating the reasonableness of the expected ROA assumption has been to look to multiple data sets when evaluating the current year's expected return assumption. Generally those data sets have been:

- A "backward looking" historical rolling return analysis using historical returns for a portfolio with an equity & bond asset mix similar to the Plans, over rolling 10-year, 20-year, 30-year and 40-year periods;
- A "backward looking" 1000 trial monte carlo, over a 30-year horizon, using historical returns, risk and correlations for a portfolio with an equity & bond asset mix similar to the Plans;
- A "forward-looking" simulation of expected returns for a portfolio with an asset allocation similar to the Plans' as developed by the plans' independent external actuary, AonHewitt. (Prior to 2010 a supplemental simulation was conducted by the plans' independent external investment consultant EnnisKnupp; however in 2010 these two firms merged and since then a single "forward-looking" simulation has been conducted.)

In addition to different models or capital market return assumptions, additional consideration can include an active management premium, past success relative to expected returns, and other qualitative expectations.

# Assumption Setting Process for 2012

It has become an acceptable practice, when developing long-term (i.e. 10 year or greater) forecasts of expected returns, to assume no premium for int'l, mid- or small-caps, and let the investment case for these assets reside on the diversification benefits. In this vein, when examining historical returns to judge the appropriateness of the FASB ROA assumptions, it is reasonable to utilize the S&P 500 returns and US Core Bond Index (Barclays US Aggregate Bond Index) as they provide the longest historical data set -- and length of time is deemed more important for this purpose than 'over engineering' the process through incorporating sub asset classes. The allocation to equity/bonds is by far the more influential factor in determining returns.

In 2012, the Pension investment mix was expanded to include 3% (\$100 million) allocation to private equity and a restructuring of approximately 1/3 of the fixed income sector to alternative fixed income strategies. Accordingly, the Pension's policy mix was modified to 40.5/10/43.5/3/3 (stocks, convertibles, bonds and alternatives-HF, alternatives-PE). For the "backward looking" analyses, a high level 50/50 equity-fixed allocation was utilized The RBP plan has a 60/40 target policy mix of stocks and bonds OPC 009934

## **Historical Rolling Returns**

The historical rolling return analysis draws on returns from 1926 to 2011.

Summary results for the Pension are:

- The median return over the 76 10-year periods (that is the 10-years ending 12/10, 10-years ending 12/09, etc.) is 8.1%.
- Over 20-year periods, the median of the 66 periods is 8.3%.
- Over 30-year periods, the median of the 56 periods is 8.3%.
- Over 40-year periods, the median of the 46 periods is 8.8%.

Summary results for the Retiree Benefits Plan (RBP) are:

- The median return over the 76 10-year periods (that is the 10-years ending 12/10, 10-years ending 12/09, etc.) is 8.9%.
- Over 20-year periods, the median of the 66 periods is 9.2%.
- Over 30-year periods, the median of the 56 periods is 9.1%.
- Over 40-year periods, the median of the 46 periods is 9.3%.

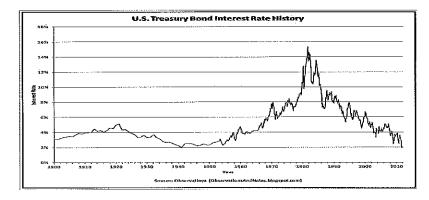
#### **Historical Monte Carlo Results**

The monte carlo simulation draws on historical returns, risk and correlations from 1926 through 2011.

- The simulation's 50th percentile return is 8.1% for the Pension.
- The simulation's 50th percentile return is 8.5% for the RBP.

### Special Note re. Fixed Income & Interest Rates

Fixed income returns in the near future could fluctuate given the current low interest rate environment (10-year Treasury +/- 2%). However, it is unclear as to when interest rates will rise. Despite the low interest rate environment, the Pension & RBP's fixed income components have both exceeded a return of 8%, for the year-to-date (11/2012). Nevertheless, for sensitivity purposes, a second monte carlo simulation was conducted focusing on a historical full interest rate cycle to further test the backward looking analysis. Research showed that interest rates were at lows of near 2% in 1941, similar to today's levels and subsequently rose to a high of over 14% in the 1980s (see chart below). Thus, the second monte carlo draws on historical returns, risk and correlations from October 1941 through 2011.



The results of the full interest rate cycle monte carlo were:

- The simulation's 50th percentile return is 8.6% for the Pension.
- The simulation's 50th percentile return is 9.2% for the RBP.

#### **Forward Looking Simulation**

The plan's actuary, AonHewitt, has run a simulation based on our benefit plans' asset mix and using their capital market assumptions, with an underlying inflation rate consistent with the plans' other actuarial assumptions. AonHewitt recommends that the selected ROA fall between the 35<sup>th</sup> and 65<sup>th</sup> percentile returns as generated by their model.

#### **Pension Fund**

Based on their 2012 Q4 assumptions, the AonHewitt simulated distribution of possible returns yields a median expected return of 7.06% with a  $35^{th}$  /  $65^{th}$  range of 7.80% - 6.32%.

The Pension Plan's observed alpha (active management outperformance) has ranged from a high of 160 bps to 40 bps over the trailing 10-years. The 3-year rolling average alpha was 140 bps. It is important to note that these historical alpha figures reflect little impact from Alternative Investments, as late 2011 marked the first year the Pension Fund has had Alternatives in its asset mix.

Further, based on alpha expectations of 150 bps from active equity management and 100 bps for active fixed income management, weighted according to the Plan's current asset allocation and utilization of active & passive management (including consideration to those asset types whose HewittEnnisKnupp capital market assumptions include an active management premium), yields a forward looking alpha expectation of approximately 85 bps.

In summary, based on a review of the Pension Fund's historical realized alpha, the plan's actuary is supportive of including a return premium to the expected return generated from their model.

#### Retiree Benefits Fund

For the Retiree Benefits Plan (RBP), based on their 2012 Q4 assumptions, the AonHewitt simulation yields a median expected return of 6.61%, with a 35<sup>th</sup> / 65<sup>th</sup> range of 7.44% - 5.78%. The RBP has had an indexed approach to its equity assets since 2006, and has demonstrated alpha of 80 bps over the past 2 years and 310 bps over the past 3 years, although for the past 5 years it has been negative. For the RBP, a forward-looking alpha expectation, modified to adjust for the 100% passive equity management of the Fund, yields a forward-looking alpha expectation of approximately 40 bps for the RBP.

Based on a review of the RBP's historical realized alpha, the plan's actuary is supportive of including a return premium to the simulated expected return generated from their model.

## **Summary**

#### **Pension Fund**

The current 7.75% Pension assumption falls in the range of results from the "backward looking" analyses and the forward-looking projection (including the alpha premium). We do not believe the difference in the observed median return of the various analyses compared to the current assumption is meaningful enough to warrant revising the assumption.

#### **Retiree Benefits Fund**

The current 8.00% RBP assumption falls in between the range of results from the "backward looking" analyses and the forward-looking projection (including the alpha premium). We note that the RBP does not have as many diversifying asset classes as the Pension and that the median results of the AonHewitt forward-looking model has dropped from prior years. While we do not place more weight on AonHewitt's (or any entity's) ability to forecast future returns as being more accurate than historical results, in the interest of conservatism we are reducing the RBP assumption by 25 bps to 7.75%.