Workshop 28: FASB Calculations

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- Review current practices
  - Calculations
  - Assumptions
  - Disclosures
- Consulting Issues
  - Issues based on size of pension plan
  - Issues for unhealthy employers
  - Issues for unhealthy pension plan
  - Special situations

Who is interested?

- Employer
  - Senior Management including CFO
  - Boards of Directors
  - Employees / Unions (limited)
- Auditors
- Lenders and Investors (M&A)
  - Public
  - Private
- Regulators
**Purpose of FAS 87 (now ASC 715)**

- Orderly recognition of corporate expense and liabilities for its pension plan over appropriate period of time on employer's financial statements
  - Employer fiscal year, not pension plan year
  - Appropriate marking to market
  - Deferred recognition of certain gains/losses
- Accounting reflects difference between expense and cash
  - Independent of cash contribution

**Expense for Pension Plans**

More complex than many corporate expenses

- Cash payments to vendors, payroll, taxes (with adjustment for accruals)
- Depreciation expense for certain purchases / assets (e.g., purchases with a useful life greater than one year)
- Expenses for multi-year projects
- R&D costs
- Allowances for returns, legal and other expenses

**Evolution of Pension Accounting Requirements-FAS 87 (ASC 715)**

- FAS 87 and FAS 88 incorporated new rules starting in 1987
- FAS 132(R) added important new disclosure items
- FAS 157 added additional disclosure requirements
- FAS 158 required balance sheet recognition of entire liability, with special disclosure of deferred gains/losses
- ASC 715 reorganized, but did not change, accounting requirements
- Recent disclosure changes
Accounting Calculations vs. Funding Calculations

<table>
<thead>
<tr>
<th></th>
<th>Funding Valuation</th>
<th>Accounting Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulator</td>
<td>IRS (DoJ)</td>
<td>SEC (DoC)</td>
</tr>
<tr>
<td>Actuarial Method</td>
<td>Pure Unit Credit</td>
<td>Projected Unit Credit</td>
</tr>
<tr>
<td>Selection of Assumptions</td>
<td>Some mandated, some selected by actuary</td>
<td>Selected by employer, subject to Auditor approval</td>
</tr>
<tr>
<td>Contribution Accounting</td>
<td>Accrual basis</td>
<td>Cash basis</td>
</tr>
</tbody>
</table>

Pension Expense

Value of benefits expected to be earned in year
+ Interest charge
  • discount rate X prior year PBO, adjusted
  • Expected return on plan assets credit
  • expected return X prior year plan assets, adjusted
+ Additional charge / credit
  • Amortization of deferred gains / losses, with optional corridor

Recognition of Pension Assets

Issues in determining appropriate value of plan assets

• How is the value of plan assets determined?
• When are plan assets measured (measurement date)?
• Disclosure of different types of plan assets (Levels 1, 2 and 3)
  • Level 1 – quoted prices in active markets for identical assets
  • Level 2 – use of significant other observable (external) inputs in valuation
  • Level 3 – use of significant unobservable (internal) inputs in valuation
Recognition of Pension Liability

Issues in determining appropriate disclosed liability

• How is liability measured? Use Projected Unit Credit.
  • Projected Benefit Obligation or PBO
• When is liability measured (measurement date)?
• How is accrued (prepaid) pension cost recognized?
• How are deferred gains/losses recognized?

Recognition of Pension Liability
(Contribution = Pension Expense)

Recognition of Pension Liability
(Contribution < Pension Expense)
Key Assumptions

Selection Process:
• Selected by Employer, not Actuary
• PPA assumptions can be (and often are) different from FASB assumptions
  • Discussion if assumptions selected are different
• Some PPA assumptions are mandated; others are selected by actuary
• Actuary can (and often does) provide guidance
• Assumptions reviewed by auditor

Key Assumptions

Actuary’s Role
• Actuary can (and often does) provide guidance
• Actuary is subject to Academy’s Qualification Standards
• Actuary is subject to ethics and professionalism standards
• Actuary is subject to all ASOPs,
  • including ASOP 21 – working with auditors
  • including ASOP 41 – disclosure requirements

Key Assumptions

Discount Rate – Issues and Impact:
• Rate at which PBO could be settled – current interest rates
• Historical selections (AAA, AA, A, BAA)
• Which yield curve to use?
• Effective rate calculation
• Bond matching
Key Assumptions
Discount Rate - Issues and impact:
• Pension Liability (and corporate liability) sensitive to rate selected
• Much narrower acceptable range than in early days
• Auditors often will value expected cash flows (provided by actuary) based on yield curve to determine whether liability is “reasonable”
• Liability Duration
  • Liability change (per cent) due to 1% change in discount rate
  • Larger for young groups; smaller for older groups
  • Larger impact to employer if pension plan is large relative to employer

Key Assumptions
Salary Growth Rate - Issues and Impact:
• Assumes future increases; not only upcoming year
• Review historical selections
• Ignore current year anomalies
• Building block method:
  • Inflation + Productivity + Merit + Longevity +/- Industry changes

Key Assumptions
Expected Long-Term Return on Plan Assets - Issues and Impact:
• Not for single upcoming year
• Based on expected investment mix
  • Based on inflation, risk premium
Key Assumptions

Expected Long-Term Return on Plan Assets - Issues and Impact:

• Comparison to previous year assumptions and returns
• Change in expected future investment mix
• Expected asset class risk premiums?
• Pension expense directly impacted by this assumption, based on plan assets

Key Assumptions

Expected Long-Term Return on Plan Assets - Issues and Impact (old):

<table>
<thead>
<tr>
<th>Asset</th>
<th>Allocation</th>
<th>Risk premium over risk-free rate</th>
<th>Expected return</th>
<th>(2) x (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocks</td>
<td>60%</td>
<td>7%</td>
<td>10%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Bonds</td>
<td>35%</td>
<td>2%</td>
<td>5%</td>
<td>1.75%</td>
</tr>
<tr>
<td>Cash</td>
<td>5%</td>
<td>0%</td>
<td>3%</td>
<td>0.15%</td>
</tr>
</tbody>
</table>

7.90%

• Assumed risk-free rate (= inflation) = 3%
• Sample risk premiums are used
• Should tie into disclosure of asset mix
• Note sensitivity to risk premium and allocation

Key Assumptions

Expected Long-Term Return on Plan Assets - Issues and Impact (new):

<table>
<thead>
<tr>
<th>Asset</th>
<th>Allocation</th>
<th>Risk premium over risk-free rate</th>
<th>Expected return</th>
<th>(2) x (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocks</td>
<td>60%</td>
<td>5%</td>
<td>7%</td>
<td>4.20%</td>
</tr>
<tr>
<td>Bonds</td>
<td>35%</td>
<td>1%</td>
<td>3%</td>
<td>1.05%</td>
</tr>
<tr>
<td>Cash</td>
<td>5%</td>
<td>0%</td>
<td>2%</td>
<td>0.10%</td>
</tr>
</tbody>
</table>

5.35%

• Assumed risk-free rate (= inflation) = 2%
• Sample risk premiums are used
• Should tie into disclosure of asset mix
• Note sensitivity to risk premium and allocation
Key Assumptions

Mortality - Issues and Impact:
- Reflect employer or industry-specific mortality, as of measurement date
- Reflect expected changes (improvements?) in future mortality
  - Mortality table with explicit projection of future mortality improvement
  - Static mortality table reflecting future mortality improvement in static rates.
- Use of set-backs or set-forwards
- Auditor preferences

Key Assumptions

Assumed Retirement Age - Issues and Impact:
- Single assumed retirement age or rates of retirement
- Differ by gender, salaried vs. hourly, etc.
- Impact depends on early retirement subsidy, late retirement salary growth?

Key Assumptions

Expected Form of Benefit - Issues and Impact:
- Annuity choices – antiselection
- Lump sums
  - Antiselection
  - Subsidized lump sums (417(e), other)
- Shortened liability duration → can impact discount rate
- Auditor issues
Key Assumptions

Expected Turnover - Issues and Impact:

• Based on age, service, gender, job type?
• Impact
• Comparison to company/industry history, anticipated cutbacks and changes?
• Auditor issues

<table>
<thead>
<tr>
<th>Impact of Changes in Assumptions</th>
<th>Impact on PBO</th>
<th>Impact on Pension Expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase Discount Rate</td>
<td>Decrease</td>
<td>Increase or Decrease</td>
</tr>
<tr>
<td>Increase Salary Growth Assumption</td>
<td>Increase</td>
<td>Increase (None if Frozen)</td>
</tr>
<tr>
<td>Increase Expected Return on Assets</td>
<td>None</td>
<td>Decrease</td>
</tr>
<tr>
<td>Turnover, Mortality, Assumed Retirement Age</td>
<td>Increase or Decrease</td>
<td>Increase or Decrease</td>
</tr>
</tbody>
</table>

FAS 88 – Curtailments and Settlements

When is there a Curtailment?

• Reduction or elimination of future benefit accruals
• Reduction or elimination of expected future working lifetime
FAS 88 – Curtailments and Settlements

When is there a Settlement?

• Elimination of substantial portion of benefit liability - irrevocable
• Purchase of annuity benefits from insurance company - irrevocable
• Payment of lump sums to significant number of participants - irrevocable

FAS 88 – Curtailments and Settlements

Mid-year events:

• Recognize direct cost impact of settlement or curtailment
• Recognize portion of deferred gains or losses in pension expense
• 3 sets of calculation during fiscal year
  • Regular FAS 87 calculation for portion of fiscal year before FAS 88 Event
  • Impact of FAS 88 event
  • Regular FAS 87 calculation for portion of fiscal year after FAS 88 Event

FAS 88 – Curtailments and Settlements

Typical Curtailments and Settlements

• Benefit freeze
• Staff layoff
• Large annuity purchase
• Plan termination
**FAS 88 – Curtailments and Settlements**

Unexpected Settlements – Large Lump Sum Payments

• Settlement Threshold: Lump Sums > Service Cost + Interest Cost
  • Frozen plan with low interest rates, lump sums can exceed interest cost
  • Mid-sized plans (can be unexpected due to normal plan operation)
  • Large plans (expected with risk-transfer programs)

• Pension expense impact
  • Recognize direct cost impact of settlement
  • Recognize portion of deferred gains or losses

**Employer Disclosures - Footnotes**

• PBO and pension assets
  • Overfunded
  • Underfunded

• Reconciliation of changes from prior to current yearend
  • Pension assets
  • Liability
  • Accumulated OCI

• Pension Expense, including components
  • Assumptions
  • Asset mix, concentration and investment policy
  • Expected future benefit payments (10 years)

**Employer Disclosures – Risks to Actuary**

Pension results are part of corporate financial statements

• Pension Expense – used by equity investors (private or public)
• Pension Expense – used in ratemaking or government reimbursement
• Funded Status – used by lenders to company (banks, bondholders)
• Funded Status – used by potential acquirers of company (M&A)

What if pension results are misstated?
Employer Disclosures - Changes

Accounting Standards Update 2017-07
Effective FYB after 12/15/17 (12/15/18 – non public)

- Financial Statement must show Service Cost in operating cost
- Financial Statement must show other Pension Cost components separately
- Only Service Cost is eligible for capitalization

Employer Disclosures - Changes

Accounting Standards Update 2018-14
Effective FYB after 12/15/20 (12/15/21 – non public)

- No longer required to disclose
  - AOCI expected to be recognized in upcoming year
  - Expected assets to be returned to employee
  - Information about annuity contracts and related party transactions
  - Change in liability for 1% change in trend (Post Retirement Medical Benefits)
- Reason – cost of disclosure exceeded usefulness of disclosure

Employer Disclosures – Recent Changes

Accounting Standards Update 2018-14
Effective FYB after 12/15/20 (12/15/21 – non public)

- New – Must disclose weighted average interest crediting rate – cash balance plans
- New – Must disclose reason for significant gains/losses of PBO
- New – Must disclose reason for significant changes not otherwise apparent
- Clarify – Must disclose ABO and assets if Assets < ABO
- Clarify – Must disclose PBO and assets if Assets < PBO
Consulting Situations

• The role of the CFO and Executive Management
• The role of the Board of Directors
• The role of the Auditor
• The role of the Actuary

Consulting Situations – Structure

<table>
<thead>
<tr>
<th>Pension Plan Health</th>
<th>Good</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time to fix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid deterioration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can it be fixed?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Consulting Situations

Large Pension Plan Compared to Employer

• Mature industries – auto, manufacturing, etc.
• Significant impact on employer financial statements
• Management and Auditor interest / involvement
• Possible use of sophisticated approaches
• Assumptions
• Methods
Consulting Situations

Unhealthy Employer

- Often mature industries, not always
- Pension plan is probably frozen – or probably should be
- Can they terminate pension plan?
- Management focused on company survival, not pension plan
  - Can be distracted
  - Usually focused on funding (cash), not expense or liability (accounting)
- Possible management transition
  - New people
  - Learning curve
  - Interest

Consulting Situations

Unhealthy Pension Plan

- Often unhealthy employer, not always
- Should pension plan be frozen? Or terminated?
- Health of pension plan can be due to use of cash decisions
  - Not enough cash available (often with unhealthy employer)
  - Better uses of cash
    - Reduce employer debt
    - Corporate projects
    - Acquisition expenses

Consulting Situations

Employer - Healthy
Pension Plan - None

<table>
<thead>
<tr>
<th>Assets - 12/31/18</th>
<th>Liability / Equity - 12/31/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash: 1,000</td>
<td>Corporate Debt: 200</td>
</tr>
<tr>
<td>Pension:</td>
<td>20% Debt/Equity:</td>
</tr>
<tr>
<td>Total: 1,000</td>
<td>Total: 1,200</td>
</tr>
<tr>
<td>Operating Income</td>
<td>Pension Expense:</td>
</tr>
<tr>
<td>100</td>
<td>2019 Net Income:</td>
</tr>
<tr>
<td>Cash: 2,000</td>
<td>Corpus: 200</td>
</tr>
<tr>
<td>Pension:</td>
<td>Equity: 800</td>
</tr>
<tr>
<td>Total: 2,000</td>
<td>Total: 1,800</td>
</tr>
</tbody>
</table>
### Consulting Situations

#### Employer - Healthy

<table>
<thead>
<tr>
<th>Pension Plan Size - Large</th>
<th>Pension Plan Funding - Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/18</td>
<td>12/31/18</td>
</tr>
<tr>
<td>Cash</td>
<td>1,000</td>
</tr>
<tr>
<td>Pension</td>
<td>500</td>
</tr>
<tr>
<td>Total</td>
<td>1,500</td>
</tr>
<tr>
<td>Operating Income</td>
<td>200</td>
</tr>
</tbody>
</table>

#### Employer - Healthy

<table>
<thead>
<tr>
<th>Pension Plan Size - Large</th>
<th>Pension Plan Funding - Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/18</td>
<td>12/31/18</td>
</tr>
<tr>
<td>Cash</td>
<td>1,000</td>
</tr>
<tr>
<td>Pension</td>
<td>700</td>
</tr>
<tr>
<td>Total</td>
<td>1,500</td>
</tr>
<tr>
<td>Operating Income</td>
<td>200</td>
</tr>
</tbody>
</table>

#### Employer - Healthy

<table>
<thead>
<tr>
<th>Pension Plan Size - Small</th>
<th>Pension Plan Funding - Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/18</td>
<td>12/31/18</td>
</tr>
<tr>
<td>Cash</td>
<td>1,000</td>
</tr>
<tr>
<td>Pension</td>
<td>70</td>
</tr>
<tr>
<td>Total</td>
<td>1,070</td>
</tr>
<tr>
<td>Operating Income</td>
<td>100</td>
</tr>
</tbody>
</table>
### Consulting Situations

**Employer - Unhealthy**

<table>
<thead>
<tr>
<th>Date</th>
<th>Pension Plan - None</th>
<th>Assets - 12/31/18</th>
<th>Liability / Equity - 12/31/18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cash 1,000</td>
<td>Corporate Debt 500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Operating Income 100</td>
<td>Pension 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total 1,000</td>
<td>Equity 500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pension Expense .</td>
<td>Total 1,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2019 Net Income 300</td>
<td>Pension 700</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equity 300</td>
<td>Total 1,300</td>
</tr>
</tbody>
</table>

**Consulting Situations**

- Executives may want low expense to increase executives’ bonuses
- Unhealthy employer may like to minimize disclosed pension liability
- Conservative auditors may want higher expenses or liability
  - Private vs. public company
  - Equity investors
  - Banks (or other lenders)
  - Loan covenants? Bankruptcy?
  - Acquisition?
  - Litigation?
Consulting Situations

• Mid-sized employer may look largely to actuary for guidance
  • How to get them involved
• Employer who decides to reflect FAS 87 after years of not reflecting
  • Why did they not reflect FAS 87 in the past?
  • Why start now?
  • New or existing client?
  • Discuss with client / auditors

Consulting Situations

• Pension plan with very poor participant data
• Unable to identify all pension plan assets?
  • Poor records
  • Unusual assets – valuation issues
• Risk consulting / sensitivity to Employer