

# Simon Fraser University

## Pension Valuation

### Acma 475

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# Agenda

Valuation provisions

Valuation Results

2013 Going-Concern Gain and Loss

Experience

Change in Provisions and Assumptions

Sensitivity Impact

Recommendations

# Valuation Provisions

## Plan provisions

- ▶ 1.3% of FAE up to FAYMPE + 2% of FAE over FAYMPE
- ▶ Earliest Retirement Age 55
  - ▶ Normal Retirement Age 65
- ▶ PUC Method
  - ▶ Includes salary projection

## Solvency provisions

- ▶ TUC method
  - ▶ No salary projection
- ▶ Retirement age 55

## 2012 Going-Concern and Solvency Results

	Going-concern	Solvency
Asset	9,571,300	9,271,300
Liability		
Active	8,311,200	9,019,200
Deferred	286,000	417,100
Pensioner	1,324,400	1,566,400
Total	9,921,600	11,002,700
Surplus / Deficit	(350,300)	(1,731,400)

## 2013 Going-Concern and Solvency Results

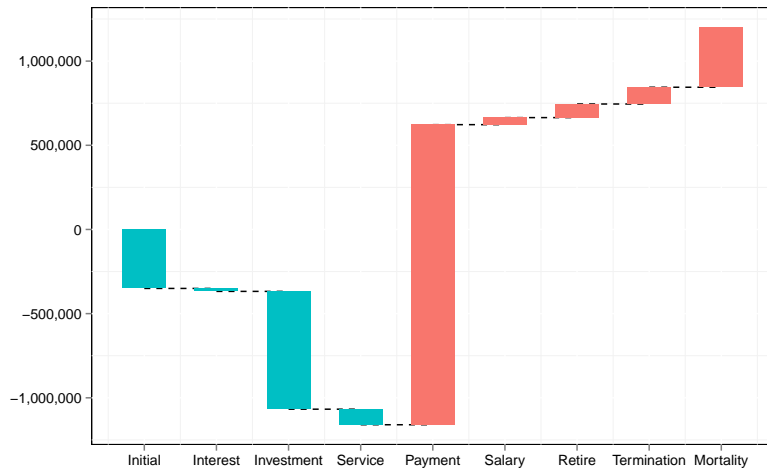
	Going-Concern	Solvency
Asset	10,711,300	10,386,300
Liability		
Active	6,721,500	
Deferred	378,200	497,800
Pensioner	3,271,700	3,676,500
Total	10,011,100	10,895,800
Surplus / Deficit	700,200	(509,500)

## 2013 Plan Membership and Liabilities by Membership Group

- ▶ Total Membership Count = 61

	Membership	Liabilities
Deferred	10%	4%
Pensioners	23%	33%
Active	67%	63%

# Experience Gain / Loss



## Experience Gain / Loss

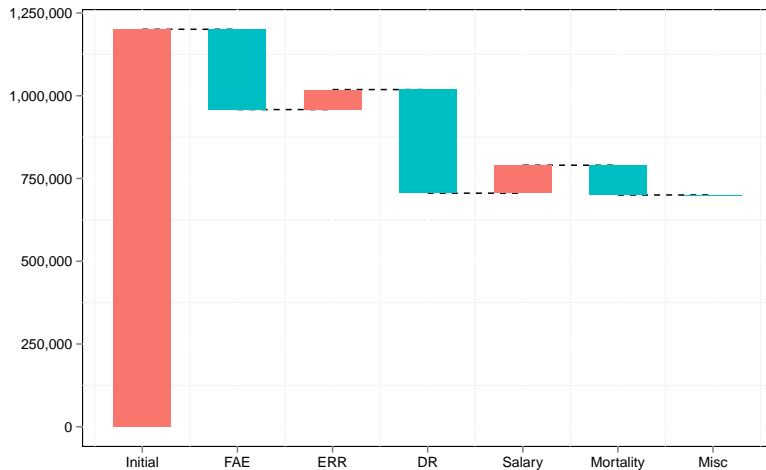
- ▶ Investment experience was much lower than expected
  - ▶ We expected +5% return and actual return was -1.8%
- ▶ Interest rates were lower than expected
- ▶ 2013 Salaries were lower than expected
- ▶ More plan members retired than expected
- ▶ More plan members terminated than expected
- ▶ Mortality was higher than expected
- ▶ This experience resulted in changing some of our assumptions for this valuation



## 2012 vs 2013 Assumptions

	Dec 31, 2013	Dec 31, 2012
Discount Rate	4.75%	5%
Salary Scale	4%	4.25%
Mortality	UP94 (to 2020)	UP94 (to 2015)
Retirement age	60	65
FAE / FAYMPE	3	5
ERR	3% per year	Actuarial Equivalent

## Assumption Gain / Loss



## Summarized Gain / Loss

	Active	Deferred	Pensioner	Overall
FAE	Loss	–	–	Loss
ERR	Gain	Loss	–	Gain
Discount rate	Loss	Loss	Loss	Loss
Salary Scale	Gain	–	–	Gain
Mortality	Loss	Loss	Loss	Loss

## Assumption Gain / Loss Order of Changes

1. Form (Final Average Earnings Period)
2. Retirement Age and Early Retirement Reduction
3. Salary Gain
4. Mortality Assumption
5. Discount Rate

## Pension Formula: FAE5 to FAE3

- ▶ Both salary and YMPE year range were changed
- ▶ FAE3 is more favourable to plan members because salaries are increasing with age
- ▶ FAYMPE3 is less favourable to plan members because the pension limit is higher

### **Loss**

## Early Retirement Reduction: Actuarial equivalent to percentage

- ▶ Changed to 3% reduction per year
- ▶ Affects both active and deferred members
- ▶ Favourable to plan members
  - ▶ Actuarial equivalent is approximately 6%

### Loss

## Retirement Age: Age 65 to 60

- ▶ The ERR change will encourage plan members to retire earlier
- ▶ Assumption change is favourable to company because final salaries and service are lower
  - ▶ Offsets the Loss from the ERR change for going-concern valuation
- ▶ No impact on solvency

**Gain**

## Mortality: 2015 Projection to 2020 projection

- ▶ Assume lower mortality over time
- ▶ Increases company's liability on all plan members
- ▶ Reflects improving medical care and life expectancy

### **Loss**



## Salary increase: 4.25% to 4%

- ▶ Lower salary scale is favourable to the plan because it lowers liability
- ▶ Reflects slower than expected economic recovery
- ▶ Reflects experience gain for salary changes

### **Gain**

Discount rate: 5% to 4.75%

- ▶ Reflects slower than expected economic recovery
- ▶ Reflects experience loss for interest rate
- ▶ Accounts for largest impact on liabilities

**Loss**

## Discount rate sensitivity

	DR	DR - 1%	$\Delta$ Liability
Going-concern	4.75%	3.75%	1,429,183
Solvency			
CV	3.25%	2.25	618,900
AP	3.50%	2.50%	854,500
Total	—	—	1,473,400

## 2014 ER Contributions

Employer Contributions	230,700
Expected 2014 Salary	1,646,000
Employer Contributions %	14.0%

## Funding Recommendations

	Minimum	Maximum
Employer Contributions	230,700	230,700
Solvency Special Payment	109,300	509,500
Total Payment	340,000	740,200