Accounting For Pensions

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Defined Benefit vs. Defined Contribution

Defined Contribution Plan:

- The firm's contributions are set according to a specific formula.
- Contributions can be a fixed dollar amount, a percentage of salary, a percentage of profits etc.
- The contributions are invested in assets.
- Upon retirement the employee receives their share of the assets in the fund.

Defined Benefit Plan:

- The employee's retirement benefits are set according to a specific formula.
- The formula is usually a variation of this equation:
  - Contract % x # Years of Service x Future Salary
- The Firm is required to fund the plan (make contributions) such that the funds are sufficient to pay their liability.
- Plans are formed according to ERISA and subject to regulation by the PBGC.

What are the pros and cons of the two plans?

Defining the Pension Obligation

The Pension obligation (liability) should be the present value of the future payments.

Projected Benefit Obligation: Present value of the expected future payments based upon projected future salaries.

Example: Assume that the annual benefit is:
2% x # of years of service x Final Salaries

If you expect an employee to retire in 5 years after a total of 20 years of service at a final salary of $100,000, the expected annual benefit is 20 x 2% x $100,000 = $40,000. If you further expect individuals to receive 15 years after retirement, then:

The Projected Benefit Obligation is equal to the present value of the fifteen payments of $40,000 discounted back an additional five years.

Using an 8% discount rate, the PBO at 12/31/00 is:
Pv(8%,5,,pv(8%,15,40000)) = $233,017.

Changes in the Benefit Obligation

The Projected Benefit Obligation is affected by:

Service Cost: Value of benefits earned by employees during the period.

Interest Cost: Interest accrued on unpaid benefits.

Prior Service Cost: Change in benefits resulting from a change in the pension contract.

Actuarial/experience gains/losses: Change in benefits resulting from changes in actuarial estimates (or differences between actual and expected values).

Payment of benefits.

Example: Using the example above and using an 8% discount rate, the PBO as of 1/1/00 would be:

Pv(8%,6,,pv(8%,15,38000)) = $204,969.
Service cost = Pv(8%,5,,pv(8%,15,2000)) = $11,651
Interest cost = $204,969 x 8% = $16,398
The PBO at 12/31/00 would be: $204,969 + $11,651 + $16,398 = $233,018.

Example of PSC: Let's say that on 1/1/00 the contract was changed so that the benefit percentage is now 2.5%. Now the annual benefit is 19 x 2.5% x $100,000 =$47,500. The PBO after the change is Pv(8%,6,,pv(8%,15,47500)) = $256,211.
256,211 - $204,969 = $51,242

Beginning PBO =	$204,969
Service cost =	14,564
Interest cost =	20,497
Prior service cost =	51,242
Ending PBO =	291,272

Example of Actuarial Loss:

Assume that on 1/2/00, the company changes the expected final salary from $100,000 to $120,000. Now the annual benefit is 19 x 2.5% x $110,000 = $52,250. The revised PBO is Pv(8%,6,,pv(8%,15,52250) = 281,833 and the actuarial loss is $281,833-256,211 = $25,622

Beginning PBO =	$204,969
Service cost =	16,020
Interest cost =	22,547
Prior service cost =	51,242
Actuarial loss =	25,622
Ending PBO =	320,400

Pension Expense

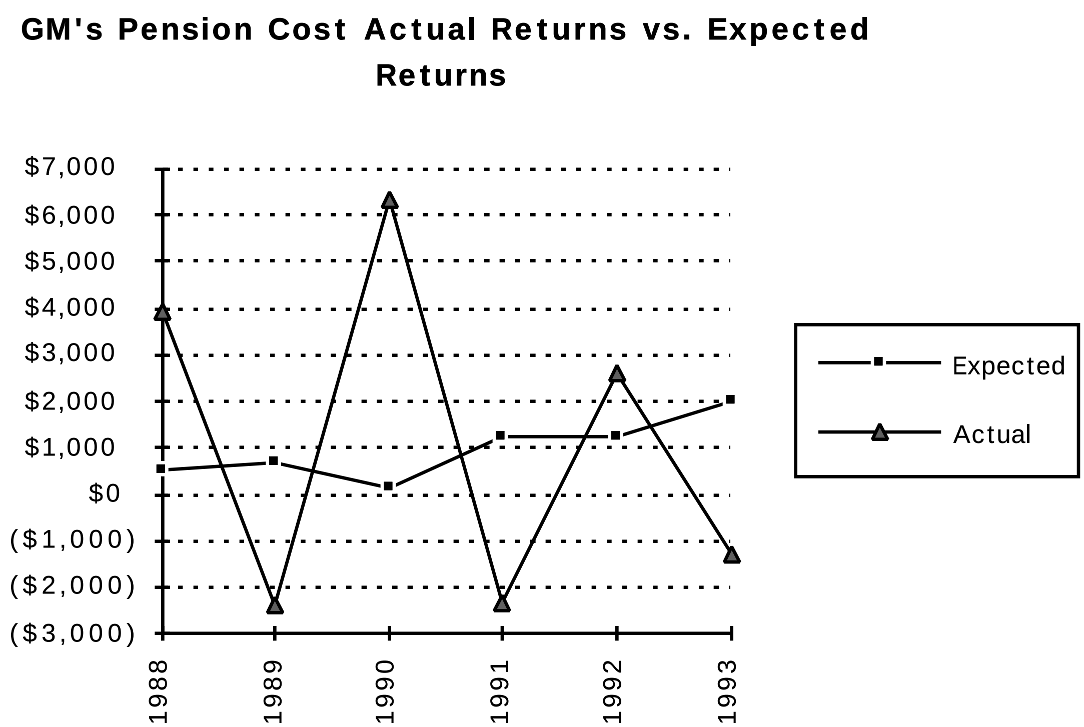
Pension Expense consists of:
Service Cost
Interest Cost
Amortization of prior service cost
Amortization of unrecognized gains/losses
Reduced by the **expected** return on plan assets

Note that the expected return is sometimes listed as the actual return less the unexpected return.

Prior service cost is like prepaid wages and is amortized over the average remaining service period of employees.

Unrecognized gains and losses include actuarial gains/losses, experience gains/losses, and the unexpected return on plan assets. They are generally amortized in the period after they are created.

Why do we defer unexpected returns?



Funding:

Firms net the amount of the pension obligation against the value of assets set aside to pay the obligation. The difference between the value of the obligation and the value of the assets represents the extent to which the pension plan is over or under funded.

Once the funding level is determined, the firm must reconcile the funding to the balance sheet asset or liability.

The difference is that various costs/gains/losses are deferred (not recognized) according to GAAP.

Assume that at 1/1/00 the pension plan had assets of $200,000, and an expected rate of return of 10%. During the year, the firm earned 15% on its assets and made an additional contribution of $25,000 to the plan.

Fair Value of Plan Assets:

Beginning Balance	$200,000
Actual return	30,000
Contribution	25,000
Ending Balance	$250,000

Assume that the firm had net unrecognized gains at 1/1/00 of $50,000 and amortized $3,000 of the gains in 2000.

Unrecognized Gains/Losses

Beginning Balance	$50,000
Unexpected gain on plan assets	10,000
Actuarial Loss	(25,622)
Amortization	(13,000)
Ending Balance	21,378

Example of Pension Disclosures

Pension Expense:

Service Cost	$16,020
Interest Cost	22,547
Actual Return on assets	(30,000)
Deferral of unexpected gain	10,000
Amortization of PSC	6,405*
Amortization of Unrec g/l	(13,000)
Annual Expense	57,973

*Assumes an 8-year average remaining service period.

Reconciliation of Accrued Pension Cost

PBO in excess of Plan Assets	$70,400
Unrecognized PSC	($44,837)
Unrecognized gains	21,378
Pension Liability	46,941

Pension Journal Entries:

Dr. Pension Expense	57,973
Cr. Accrued Pension Cost	57,973
Dr. Accrued Pension Cost	25,000
Cr. Cash	25,000

Minimum Pension Liability

The ending pension liability on the balance sheet needs to be at least equal to the unfunded Accumulated Benefit Obligation (the PBO without any adjustment for future salaries).

Assume that the ABO at 12/31/00 is $300,000. Then the unfunded portion of the ABO is 300,000-250,000 = $50,000.

Because the accrued pension cost (46,941) is less than the minimum liability (50,000) the firm must record an additional minimum pension liability adjustment.

PBO in excess of Plan Assets	$70,400
Unrecognized PSC	($44,837)
Unrecognized gains	21,378
Additional minimum liability adjustment	3,059
Pension Liability	50,000

Example of Pension Disclosures: Gillette Corporation.

PENSION PLANS AND OTHER RETIREE BENEFITS

(Millions)	1999	1998	1997
COMPONENTS OF NET BENEFIT EXPENSE:			
Service cost-benefits earned	$69	$67	$64
Interest cost on benefit obligation	116	123	115
Estimated return on assets	(166)	(157)	(118)
Net amortization	13	6	6
Plan curtailments and other	(7)	--	--
Total benefit expense	25	39	67

The funded status of the Company's principal defined benefit and other retiree benefit plans and the amounts recognized in the balance sheet at December 31follow.

(Millions)	1999	1998
CHANGE IN BENEFIT OBLIGATION:		
Balance at beginning of year	$2,022	$1,790
Benefit payments	(97)	(105)
Service and interest costs	185	191
Amendments	5	48
Actuarial (gains) losses	16	88
Plan settlements and other items	(99)	--
Currency translation adjustment	(76)	10
Balance at end of year	1,956	2,022
CHANGE IN FAIR VALUE OF PLAN ASSETS:		
Balance at beginning of year	1,957	1,540
Actual return on plan assets	275	204
Employer contribution	39	299
Benefit payments	(78)	(86)
Plan settlements	(91)	--
Currency translation adjustment	(50)	--
Balance at end of year	2,052	1,957

(Millions)	1999	1998
Plan assets greater (less) than benefit obligation	96	(65)
Unrecognized prior service cost and transition obligation	50	57
Unrecognized net loss (gain)	(56)	54
Minimum liability adjustment included in:		
Intangible assets	(13)	(17)
Stockholders' equity	(30)	(47)
Net prepaid (accrued) benefit cost included in consolidated Balance sheet	$47	$(18)

Textbook Review Problems

Pension accounting can be a bit complicated due to the terminology employed and the deferred recognition of gains and losses. The best way to learn the concepts is through repetition and working your way through problems on your own. A few problems are listed below. You are encouraged to also do additional problems in the text and the text supplements

P17-2, P17-3, P17-4, P17-11, E17-14